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MBA PROFESSIONAL REPORT

Process Improvement and Information Technology Illustrated through the Naval Aviation Production Process Improvement (NAPPI) and the Flight Hour (FHP)/ Flight Hour Other (FO) Programs

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By: **William M. Emmel**

December 2004

Advisors: **Lawrence R. Jones**
Glenn R. Cook

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Proper execution of appropriated funds is critical if the Navy hopes to maximize the optimization of their limited resources. The Navy's Flight Hour (FHP) and Flight hour Other (FO) programs are no exception. These programs are being managed by good people, utilizing inefficient and out dated practices that do not adequately take advantage of the many Process Change and Information Technology resources currently available in today's Navy. This project report will highlight the need for change in the FHP/FO budget management process, discuss successful process change efforts within the Navy, demonstrate the functionality of change in the FHP/FO management process through information technology, and provide a roadmap to a solution that is in alignment with the Navy's goals outlined in Naval Power 21…A Naval Vision. Process Change using Information Technology is a mandate in DoD. Information Technology can be the enabler to PC that allows more effective and efficient use of the Navy's most powerful resource - its people.

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PROCESS IMPROVEMENT AND INFORMATION TECHNOLOGY ILLUSTRATED THROUGH THE NAVAL AVIATION PRODUCTION PROCESS IMPROVEMENT (NAPPI) AND THE FLIGHT HOUR (FHP)/ FLIGHT HOUR OTHER (FO) PROGRAMS

William M. Emmel, Lieutenant Commander, United States Navy

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

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December 2004

Authors: _____
William M. Emmel

Approved by: _____
Lawrence R. Jones, MBA Project Advisor

_____
Glenn R. Cook, Second Reader

_____
Douglas A. Brook, Dean
Graduate School of Business and Public Policy

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I. INTRODUCTION

The purpose of this project report is to educate, and provide a basic overview the current budgetary financial reporting practices within Commander Naval Air Pacific as it pertains to the Flight Hour Program (FHP) and Flight hour Other (FO) program and explore how to improve the budget/costs estimation and execution process. Proper execution of appropriated funds is critical if the Navy hopes to maximize the optimization of their limited resources. Today Commander Naval Air Forces faces many challenges in leading our Naval Air Force in the war on terror. Facing the same budgetary uncertainty issues year after year should not be one of them. Budget/cost estimations are in need of an overhaul. It must be overhauled to stop the vicious cycle of under funding and "buy back" (due to withholds, reprogramming, and/or bow-waving) of what should have been the previous years over obligations.

The project report introduces the DoD budget process, the Flight Hour program (FHP), Flight Hour Other (FO) program, and there budget and execution processes. It introduces Process Engineering and viable information technology solutions (web enabled Database and Enterprise Resource Planning (ERP) systems) as tools that could be used in an effort to overhaul budget requirement, allocation, and managing process. I led a team on an exercise in process improvement in a class (IS-4220) in which the focus was process improvement with information technology. The excerpts from our findings and recommendations are compelling regarding the need for change within the CNAP comptroller's office. Lastly, the project report will close with the suggestion of the need for a template or roadmap as to the feasibility weather process improvement through information technology is a viable solution in the management of the budget process.

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II. DoD BUDGETING: RESOURCE ALLOCATION PROCESS (RAP)

Resource allocation is the process in which financial resources are made available to all federal agencies. Knowledge of this process provides a foundation from which Navy Flight Hour Program Managers can begin to understand the many challenges faced in "resourcing" the program, as well as to help identify some of the inherent problems in the RAP. Resources for all activities in the Department of Defense whether weapons, personnel, or infrastructure and maintenance, are provided through the RAP. There are four phases of the RAP:

- Phases I: Planning, Programming, and Budgeting and Execution System (PPBES)
- Phase II: Enactment
- Phase III: Apportionment
- Phase IV: Execution

A. PHASE I: PLANNING, PROGRAMMING AND BUDGETING AND EXECUTION SYSTEM (PPBES)

The PPBES is the process that ultimately produces the DoD portion of the President's Budget. The process originally introduced to DoD in 1962 by Secretary of Defense Robert McNamara and last modified by Donald Rumsfeld in 2003 provides a formal and systematic framework designed to assist the Secretary of Defense in making policy and strategy decisions, and the development of forces and capabilities to accomplish required missions. The objective of PPBES is to translate national security interests into military missions and construct budgetary requirements to be presented to Congress for funding consideration. This action attempts to outfit military operational commanders with the "best" mix of equipment, forces and support, within the confines of limited resources available. A model depicting PPBES is shown below:

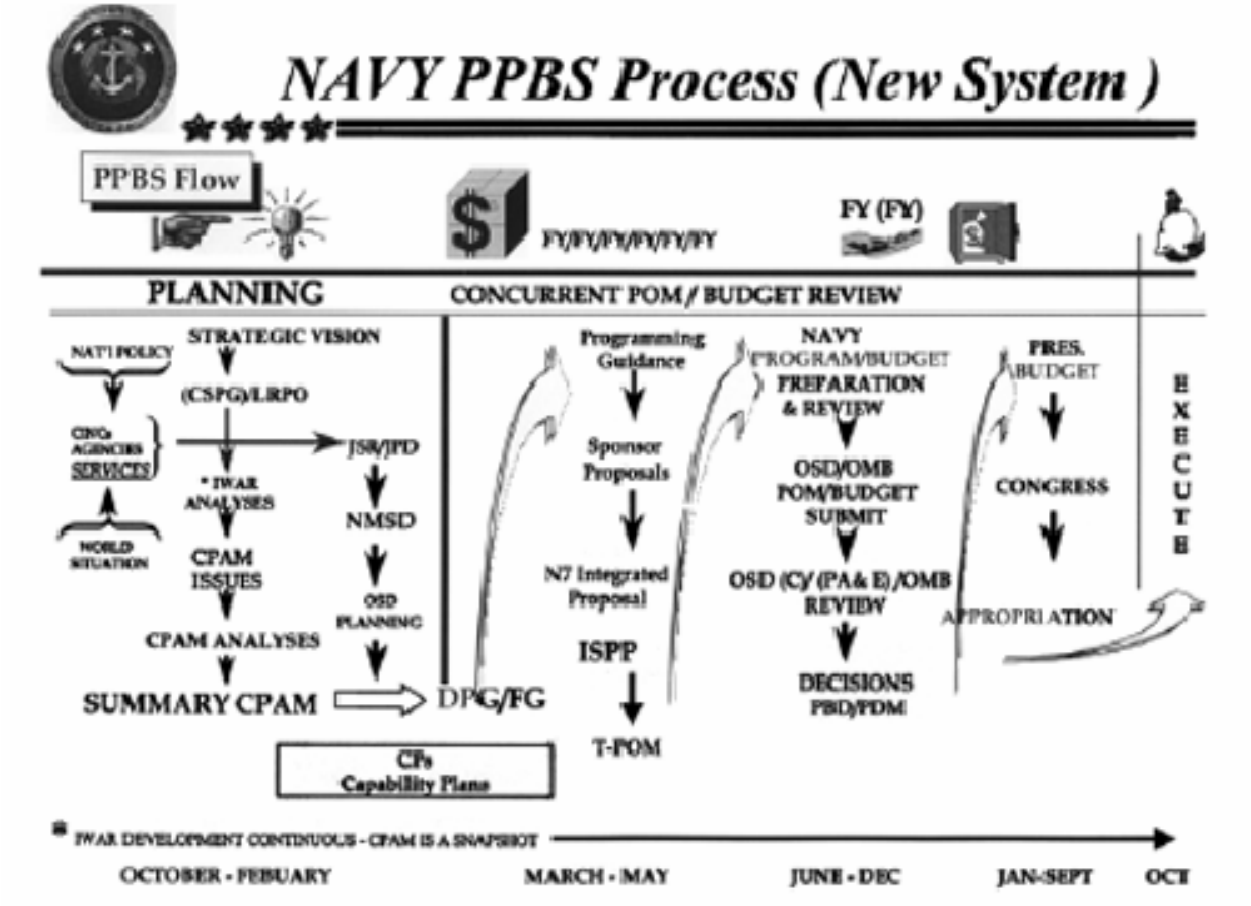

Figure 1 Revised Navy PPBES Process (From: Jones, 2003, P. 126)

PPBS was renamed in 2003 as the PPBES process with the added E for execution. The major changes were intended to provide military departments and services greater flexibility to:

1. Respond effectively to changing threats, and
2. The ability to move resources more rapidly, and
3. To put new weapons systems in the field more quickly.

In 2003 under SECDEF Donald Rumsfeld, significant changes were made to the PPBS system. It was renamed the Planning, Programming, Budgeting, and Execution System (PPBES). While basic structure of the PPBS remained unaltered, it was changed in three important ways. First, the reform merged separate programming and budget review into a single review cycle. Second, it incorporated a biennial budget process. Third, it changed

the cycle for OSD provision of the top level planning information to the military departments and services. (Jones, 2003)

It is important to note the general acceptance of the changes to the PPBS. The PPBES cycle timing changes were sensible given that new administrations rarely have the people in place or the insights necessary to put programs in place and prepare budget initiatives in the early days of an administration. Thus, designating the First year for review of national security strategy and the work on the Quadrennial Defense Review (QDR) sets the scene for a complete budget build in the second year. Designating the off years as years of minimal change, but allowing mechanisms for changes that do need to be made separately in program change proposals and budget change proposals, also seems sensible and should cut down the turmoil involved in a complete POM-Budget rebuild each year. (Jones, 2003)

The last changes to the PPBES in 2003 led to reform that ordered DoD to move from an annual program objective memorandum and Budget Estimate Submission (BES) cycle to a biennial (2-year) cycle, beginning with an abbreviated review and amendment cycle for FY2005. Under the revised process, DoD will formulate 2-year budgets and use the off year to focus on fiscal execution and program performance. The 2-year programming and budgeting cycle is designed to guide DoD strategy development, identification of needs for military capabilities, program planning, resource estimation and allocation, acquisition, and other decision processes. This change was intended to more closely align the DoD internal PPBES cycle with external requirements embedded in statute and administration policy, including the QDR as amended. (Jones, 2003, 132)

Under the new system, the QDR is intended to continue to serve as the major DoD statement of defense strategy and policy. This distinction is noteworthy as it reflects the revolution in business affairs initiative undertaken in DoD in the late 1990s and continued into the new millennium. And, from the OSD perspective, the QDR also constitutes the single link throughout DoD to integrate and influence all internal decision processes, for example, preparation of the FYDP and DPG. Section 922 of Public Law 107-314, the “Bob Stump National Defense Authorization Act for Fiscal Year 2003,” amended section 118 of Title 10 of the United States Code to align the QDR submission

date with that of the President's budget in the second year of an administration, as noted earlier. As a result of the 2003 process modification, the off-year defense planning guidance (DPG) will be issued at the discretion of the Secretary of Defense. The off-year DPG will no longer introduce major changes to the defense program, except as specifically directed by the DoD Secretary or Deputy Secretary of Defense. As noted previously in this chapter, DoD announced that no DPG would be issued in 2003 for FY2005. (Jones, 2003, P. 133)

In addition, rather than preparing the POM during the off year, according to the reform, DoD will use program change proposals to accommodate real world changes, and as part of the continuing need to align the defense program with the defense strategy. DoD will use budget change proposals (BCPs) instead of a budget estimate submission (BES) during the off year. BCPs will accommodate fact-of-life changes including cost increases, schedule delays, management reform savings, and workload changes as well as changes resulting from Congressional action. The FY2005 execution reviews will provide opportunity to make assessments of current and previous resource allocations and evaluate the extent to which DoD had achieved its planned performance goals. Performance metrics, including the OMB program assessment rating tool (PART) used in the Bush administration in the 2000s may provide the analytical underpinning to ascertain whether an appropriate allocation of resources exists in current budgets. To the extent performance goals of an existing program are not being met, recommendations may be made to replace that program with alternative solutions or to make appropriate funding adjustments to correct resource imbalances. This reform demonstrates how DoD will comply with the requirements of the Government Performance and Results Act of 1993 as enforced by OMB. PART ratings and transmission of the QDR to Congress are intended to satisfy GPRA requirements for DoD.

It is important to point out that in the past and presently, input to program and budget decisions in DoD is provided by the Deputy Secretary of Defense and staff, the position in DoD that bears a large part of the responsibility for actually attempting to manage the DoD. In addition, the Under Secretary Comptroller, the Under Secretary for Acquisition, Transportation, and Logistics, and Assistant Secretaries for other OSD

functional areas including program analysis and evaluation, policy, force management and personnel, legislative affairs, health, reserve affairs, and others, all provide views and analyses to guide program and budget decision-making.

The PPBS assesses U.S. security threats, develops a strategic plan to address threats and develops requirements to support that strategy. Requirements are then translated into specific DoD programs developed to execute that strategy and ultimately create budgets to deliver program funding. The PPBS consists of three phases to achieve its objective. They are: 1) The Planning Phase, 2) The Programming Phase, and 3) The Budgeting Phase. Planning addresses the capabilities required to carry out the U.S. national military security strategy and the resources available for defense. Programming translates the results of DoD planning into a logical six-year defense program within available resources. Budgeting converts the program into the congressional appropriation structure, focusing on building justifiable budgets while ensuring compliance with high level guidance from the President and Office of Management and Budget (OMB).

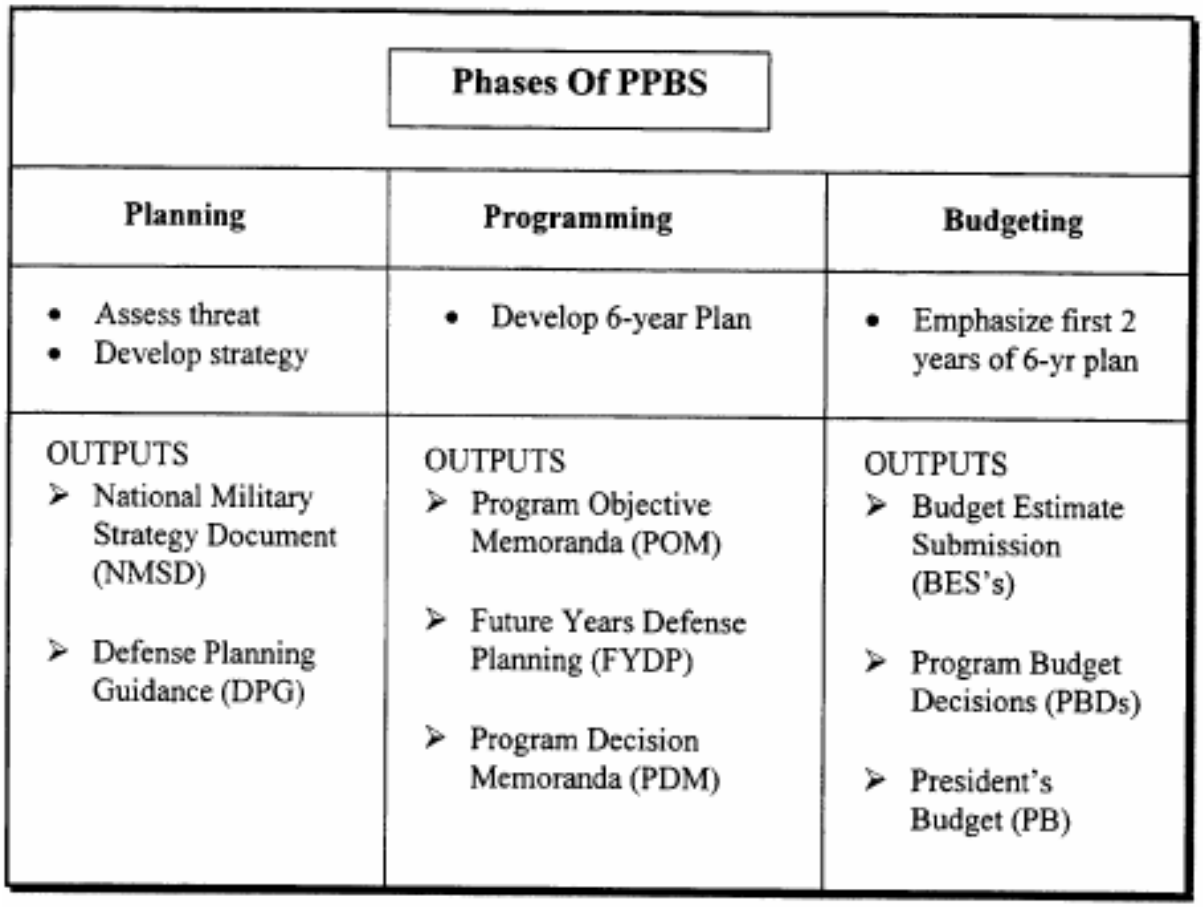

Figure 2 Phases and Outputs of PPBS (From: Keating, 1998, P. 19)

1. Planning

The planning phase begins with a review of national security objectives and ends with development of the Defense Planning Guidance (DPG). The Under Secretary Defense (USD) for Policy along with Joint Chiefs of Staff (JCS), The Office of Secretary of Defense (OSD) and numerous high-level military and defense agencies evaluate the national security objectives, the posture of the United States, and the military's capability to support those objectives. Their focus in planning is to:

- Define the National Military strategy needed to maintain U.S. security and support U.S. foreign policy 2 to 7 years in the future.
- Plan military force structure necessary to accomplish that strategy.
- Develop a comprehensive framework and roadmap for DoD that combines priorities and missions within fiscal resource limitations.

- Provide decision options to the Secretary of Defense (SECDEF) to help him assess the role of national defense in the formulation of national security policy and related decisions.

The output of the planning phase includes two documents, the National Military Strategy Document (NMSD) and the DPG. The NMSD builds on the President's security objectives, identifies strategy, provides advice to the President, and is the input basis for the DPG. It is important to note that the NMSD is not fiscally constrained.

After a series of reviews is completed, a draft DPG is published and the unified force commanders are given the opportunity to provide inputs and recommendations. This provides each of the services with a flavor of the strategic priorities and their roles in future years. The DPG is the first output document in the planning process that is fiscally constrained and guides the services in developing their programs for a six-year period. As explained by McCaffery and Jones, "The Guidance indicates annularly the assets, forces, and other resources needed to satisfy U.S. security objectives." The DPG provides the basis for subsequent service - branch and OSD programming and budgeting" (Jones, 2003, P. 108) when finalized, the DPG is signed by the SECDEF, which indicates the planning process is completed and the programming phase begins. Figure 3 shows an overview of the Planning process.(Keating, 1998, P. 15)

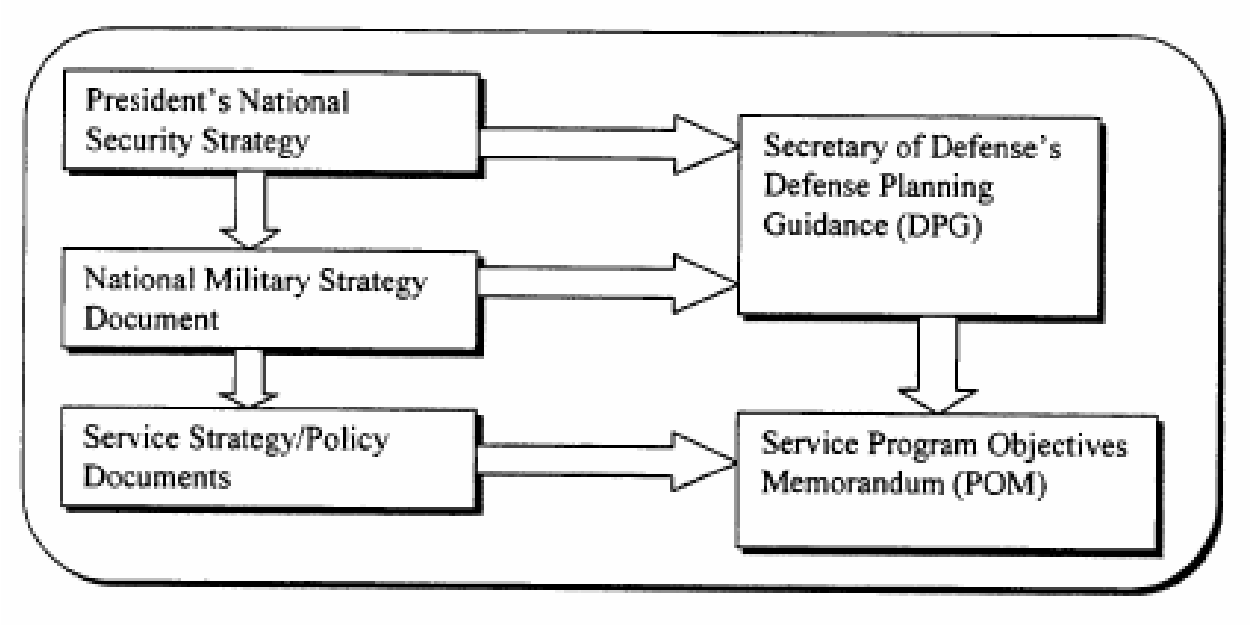

Figure 3 PPBS Planning Process (From: Keating, 1998, P. 15)

2. Programming

PPBS brings together long-term strategic planning with the programming process. The programming process is the procedure for distributing available resources equitably across many competing DoD programs (Keating, 1998, P. 15). Programming translates planning efforts into a 6-year fiscal program for forces, manpower, and material. Programming begins with the issuance of the draft DPG in the beginning of the budget cycle, and ends with the submission of each service's Program Objectives Memorandum (POM) to OSD, in mid-summer. The POM is each communities and ultimately, services plan laying out the resources needed to their tasking (programs and missions) over the next six years. Every two years during the even years, the POM is updated to reflect: 1) new missions, 2) new objectives, 3) alternative solutions, 4) allocation of the resources, 5) ongoing DoD activities and 6) the forecasted costs of each program. For the Navy, the POM is the SECNAV's recommendation to the SECDEF on the best use of the assets and resources allocated to the Navy. (Keating, 1998, P. 15)

3. Budgeting

The final phase of the PPBS process is the budgeting phase. The purpose of the budgeting phase is to allocate dollars to the DoD programs approved in the PPBS

framework. PPBS budget formulation as pointed out by Jones and Bixler has five elements: 1) issuing budget preparation guidance, 2) estimating specific program costs, 3) holding hearings to justify budget submissions, 4) ensuring submissions adhere to "both policy and financial guidelines", and finally, 5) the series of negotiations that take place to achieve the requested amount of program dollars projected to be available for the next two fiscal years and four out years (Keating, 1998, P. 16) Formulation begins when OMB issues Circular A-11 to all federal agencies. The A-11 provides general guidelines, instructions and schedules for budget submission (Keating, 1998, P. 16). When DoD receives the A-11, each service formulates its own policy guidance document, which provides more detailed budgeting guidance. For the Navy, this is known as the Navy Comptroller (NAVCOMPT) Notice 7111 and is issued by the Navy's Office of Budget (FMB). This notice provides Navy resource sponsors detailed budget formulation guidance, forecasted inflation rates, deadlines for submission, and dollar limits for each budget year (called "control numbers"). This signals the beginning of the budget process, commonly known as the "budget call". Upon receipt of this policy guidance, each service constructs detailed budget estimate submissions (BESs) based on the Program Decision Memoranda (PDM) and forwards their budget request in September to OSD. These BESs are reviewed by each of the respective service's financial managers (FM) and are forwarded to the USD Comptroller for review and modification. Final decisions on the respective services BESs are made via Program Budget Decisions (PBDs). Once changes are made and approved, the BESs are then submitted as "the DoD budget" to the Office of Management and Budget (OMB) for incorporation into the President's Budget (PB) for submission to Congress in February.

During the budget review process, cost estimates in the POM are updated with the latest pricing information, funding shortfalls are addressed and budget exhibits are prepared to justify dollar requirements. As the budget exhibits are submitted through the chain of command, a formal review process is initiated. The review process includes budget reviews held at FMB, followed by a review at OSD, and finally a joint OSD/Office of Management and Budget (OMB) review. This joint review is done to ensure the DoD budget supports the national security strategy. During the review

process, budget analysts hold hearings to review and carefully scrutinize each budget line item submitted. The analysts can take three courses of action: 1) approve exhibits as presented, 2) disapprove portions of exhibits by issuing a "mark" or 3) approve additional funds where shortfalls are detected. In the current budget environment, "marks" are by far the most common budget review actions taken within DoD. If an item is marked, the sponsor of the budget is given 48-72 hours to question the marks by submitting a "reclama". No's Reclamas are detailed appeals to the marks made by the budget analyst and explain the impact of any invalid assumptions made by the analysts. If no's reclamas are approved, the marks are removed. If not, the marks "stand" and the budgeted line item is reduced. Naturally, this process is somewhat subjective and it is important to note that budget analysts represent part of the checks and balance mechanism within the budget process. Their role and job is to apply DoD and congressional resource policy guidance to the various budget requests submitted. Since the budgeting environment is constrained by the availability of limited resources, budget analysts are tasked to ensure budget authority is provided to the most needed and defensible programs (Keating, 1998, P. 17).

B. PHASE II: ENACTMENT

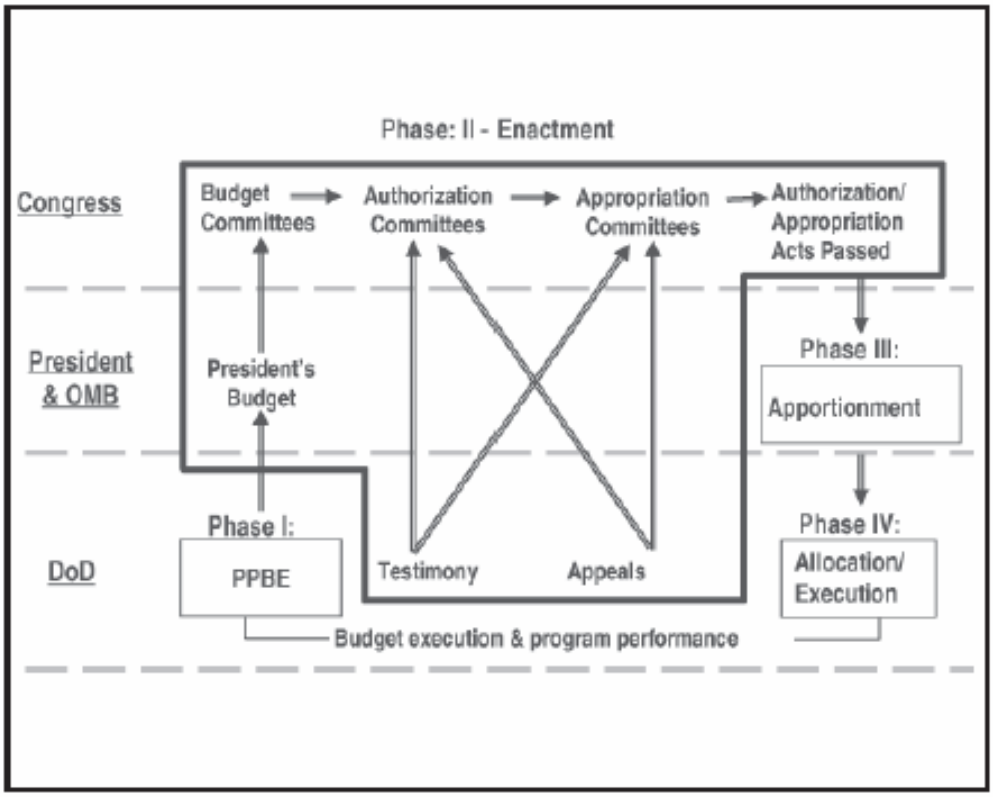

Figure 4 Resource Allocation Process (From: UNK, 2003, P. 64)

Enactment is the process in which Congress reviews the President's Budget, conducts hearings and passes legislation. The process begins when the President submits the annual budget to Congress in February and is concluded when the President signs the Annual Authorization and Appropriation bills normally prior to October Authorization legislation validates each of the Federal agencies programs and operations and specifies the maximum funding amount to be made available. The appropriations process creates the budget authority, which permits each federal agency to incur obligations throughout the year (UNK, 2003, P. 68).

C. PHASE III: APPORTIONMENT

After the President signs the authorization and appropriation legislation into law, funds are made available for DoD and other federal agencies. Apportionment occurs when OMB provides the funds to the agencies. Funds are distributed throughout DoD

from the USD Comptroller to each service's comptroller and ultimately to the end user (Keating, 1998, P. 20)

D. PHASE IV: EXECUTION

Execution consists of first gaining permission to spend, appropriations through the allotment process. DoD will show congress how it intends to spend the money during the allotment process. Subsequently, execution occurs when appropriated funds are obligated and spent (outlayed) by the authorized agencies. An obligation is a legal commitment to provide funds to pay for services, weapons systems, or the awarding of contracts. Expending funds occurs when the "check" is written and cashed. Outlay (transfer) occur when government checks are cashed and the US. Treasury makes a payment. (UNK, 2003, P. 68)

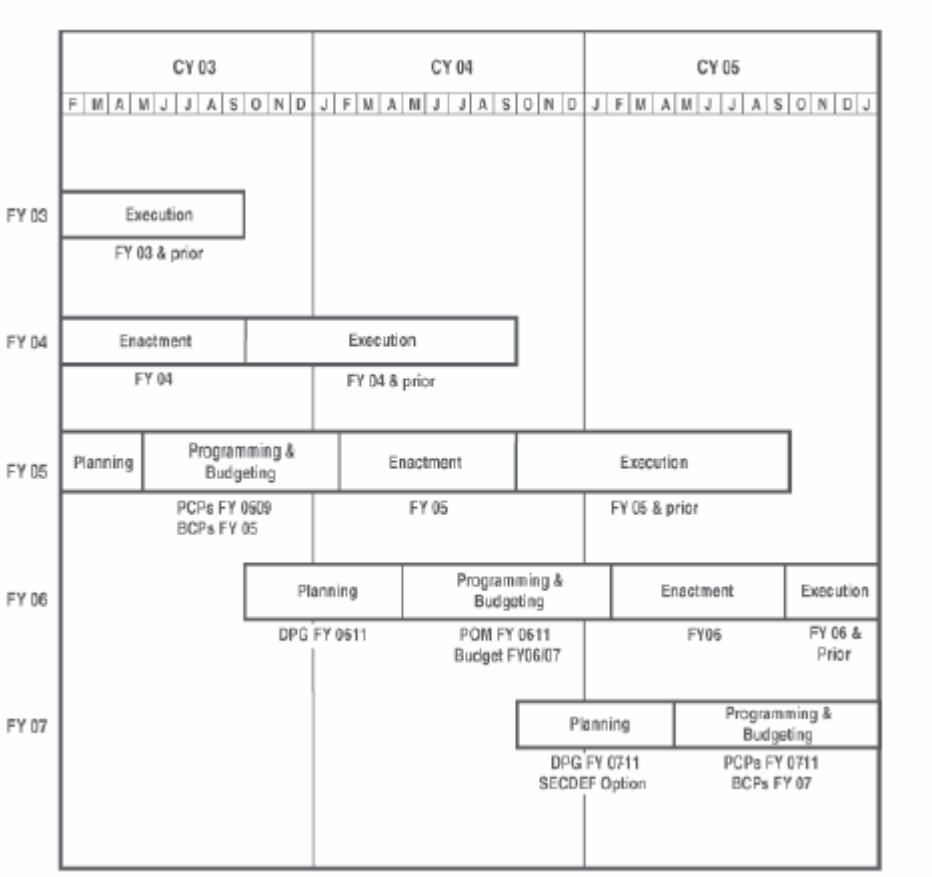

Figure 5 Resource Allocation Process – Overlap (From: UNK, 2003, P. 69)

Execution is a critical part of the new PPBES. The new process provides OSD a greater opportunity to examine and critique the budget execution decisions of its military services. A recent twist to the budget execution review was a change initiated by the Bush administration in February of 2003 directing the DoD Comptroller to implement a "performance-based budgeting" that focuses on costs of achieving outcomes rather than the details of program administration and production (Jones, 2003, P. 106)

This concludes the discussion of DoD's budgeting process. The process is complicated and not easily understood. Also, it is further complicated by the political nature of congressional oversight and interest in management of DoD's spending. It is critical that program managers and acquisition specialists understand and are up to date on the latest changes.

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III. FLYING HOUR PROGRAM (FHP) CASH MANAGEMENT AT COMMANDER NAVAL AIR FORCES PACIFIC (CNAP)

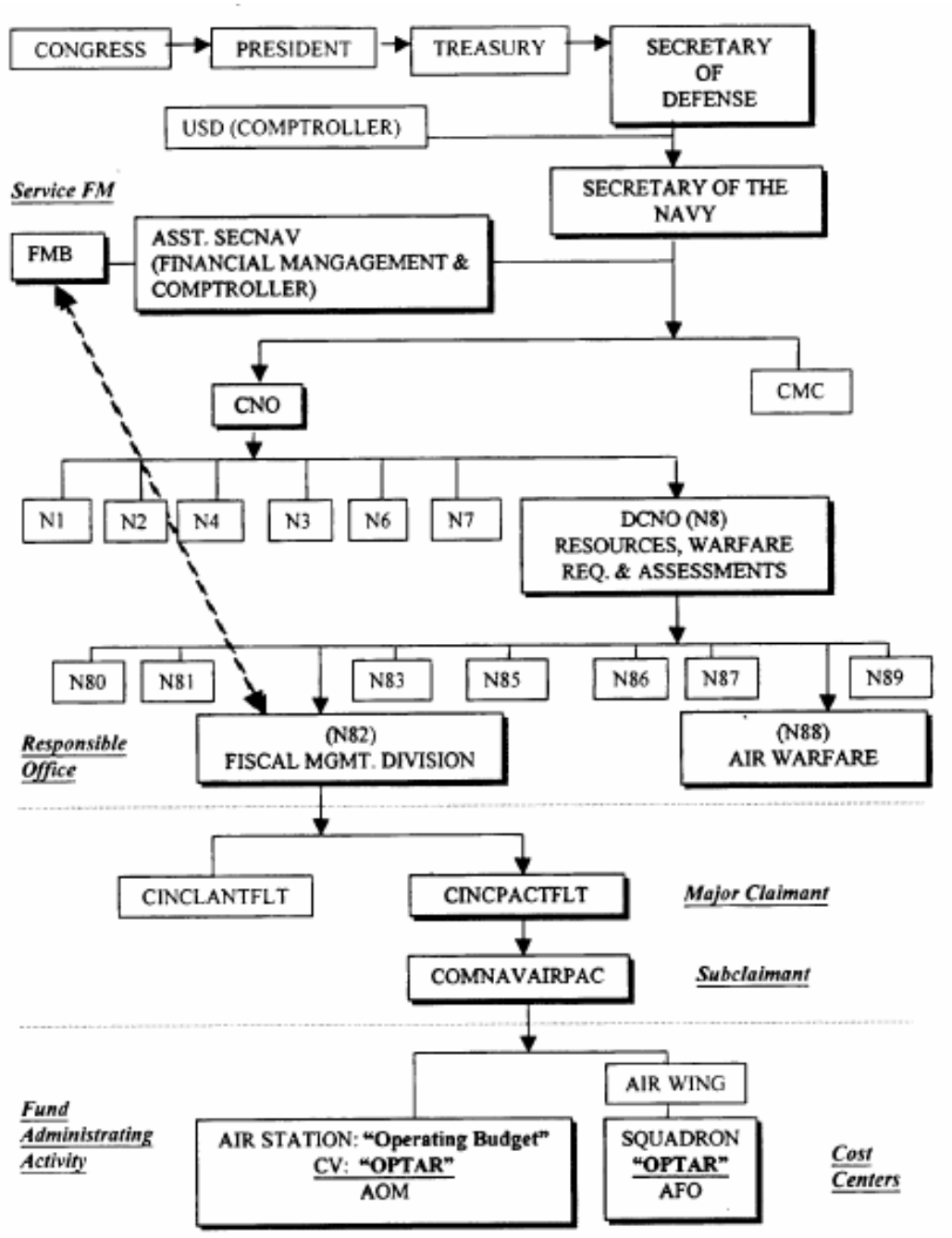

Figure 6 DoD FHP Financial Organizational and Resource Allocation Flow (From: Keating, 1998, P. 28)

A. INTRODUCTION

The FHP represents more than 3.2 billion of the Navy's FY2000 O&M, N appropriation. Stringent budgets and limited resources have left program managers with difficult decisions in budget execution, attempting to satisfy operational requirements with scarce dollars. There are two main chain of commands exist regarding the FHP program. The operational chain (depicted below) gives direction for the daily mission tasking for all Navy and Marine Corps aircraft. The chain illustrates the flow of authority from the President to the squadron commander. Organizations within the operational chain provide input for consideration in budget formulation, but have a minimal role in formal budget development.

B. FINANCIAL BUDGET PROCESS

The financial chain (depicted below) illustrates the flow of the FHP budget process. The primary FHP budget exhibit is the Operational Plan 20 (OP-20). N78 constructs the necessary FHP budget exhibits and works closely throughout the year with the Major Claimants (like CINCPACFLT, CNAP). The major claimants ensure ensures necessary budget inputs are received along with the appropriate justification. The chart also displays the aforementioned budget inputs in relation to the financial organization. The three input mechanisms used at the squadron, air station, and N-78F levels are:

1. Budget OPTAR Report (BOR),
2. Flight Hour Cost Report (FHCR),
3. and the Operation Plan (OP-20).

The BOR and FHCR are the primary financial management inputs used at CNAP to administer and track FHP obligations during the fiscal year. These reports collectively form the data used by N-78F to build the new OP-20 Budget exhibits. CNAP has 2 primary roles in the budget formulation process. 1) collecting and reporting FHP execution data , 2) developing FHP program and budget submissions. (Jones, 2001, P. 426)

C. BUDGET ALLOCATION

CNAP is the focal point for allocating, executing and monitoring flight hour funding for all Navy and Marine Corps Pacific fleet squadrons. Their primary goal and responsibility during allocation and execution is to achieve a specific level of readiness

for each squadron within the constraints of the resources available. (Jones, 2001, P. 426) At the start of the new Fiscal Year (FY), the FMB distributes quarterly Operating Budget (OB) allocations of the approved FHP funding to CNAP. In theory, the FHP OB should provide the necessary dollars to execute CNAP's flying mission. However this is never the case, with restricted DoD budgets and competing priorities financial resources are scarce. CNAP is challenged with distributing limited funds using their primary tool the OP-20. The OP-20 serves as a budgeting formulation document and an execution-monitoring tool. During budgeting , the OP-20 displays funding requirements by aircraft type, model, series (T/M/S) and the OP-20 also becomes the Navy's primary budget exhibit tool displaying the FHP funding requirements during submission and review, to OSD and OMB.

1. Primary Mission Readiness (PMR)

PMR serves as a subjective means to distribute a limited number of flight hour funds among the various activities. PMR is currently maintained at a Navy wide rate of 83% plus 2% of the flying hours-per-formed in aircraft simulators. (Jones, 2001, P. 427) To assist in the allocation of funds to the fleet, the OP-20 is separated into three schedules to reflect different mission areas:

Sched	Mission	Definition
A	TACAIR/ASW	Carrier Air Wings, Marine air wings, land and sea-based units committed to combat operations funded at 83% PMR. This category constitutes the bulk of the Navy/Marine Corps aviation warfighting capability, which primarily consists of those squadrons capable of executing the "joint strike" and "crises response" missions in support of the National Military Strategy. (1A1A fund code)
B	FLEET AIR TRAINING (FAT)	This category (also referred to as Fleet Replacement Squadrons (FRS), consists of squadrons that train pilots and navigators prior to joining TACAIR/ASW and Fleet Air Support units. These squadrons are dedicated to training fleet aircrews in each particular type aircraft and funded at 100% student throughput. (1A2A fund code)
C	FLEET AIR SUPPORT (FAS)	The primary mission of these squadrons is to provide direct and indirect support (including logistics) to Navy and Marine Corps fleet operating units and shore installations. Their funding is based on Naval Center for Cost Analyses (NCCA) methodologies and historical execution. Common mission examples include Carrier-on-Board Delivery, and Search and Recovery (1A1A fund code)
		(Jones, 2001, P. 427)

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IV. FLIGHT HOUR OTHER PROGRAM

FO costs are not included in the OP-20. These "other" costs represents outlays for flight simulator operations, Fleet Replenishment Squadron operations, civilian labor, administrative supplies, material, equipment, maintenance service contracts, and expense for travel and lodging associated with pilot and crew Temporary Additional Duty (TAD). (Keating, 1998) While most of the costs are considered essential to Naval Aviation, there are no FHP resources programmed by N-88F. FO is a level of effort program and costs are incorporated in the Major Claimants' regular budget submission. The Air TYCOMs provide input for the development of this budget, based on their forecasted requirements for the FO category of funds (Last years spending + a predetermined Inflation Rate). FO category has consistently been under funded and been a constant drain on the FHP dollars as that funding gets reprogrammed to meet the FO shortfalls. Commander Naval Air Forces Comptroller provided the following amplifying information regarding O&M,N AGSAG fund code Descriptions that impact the Flight hour Other program:

A. 1A1A MISSION AND OTHER FLIGHT OPERATIONS

> Mission and Other Flight Operations includes all Navy and Marine Corps Tactical Air (TACAIR) and Anti-Submarine Warfare (ASW) forces, shore-based fleet air support, operational testing and evaluation, operation and maintenance of White House helicopters, and miscellaneous items such as transportation of squadron equipment, travel/TAD during deployment workup and training range support. Funding provides flying hours to maintain an adequate level of readiness enabling Navy and Marine Corps aviation forces to perform their primary mission as required in support of national objectives. Primary mission readiness (PMR) is expressed as a percentage and reflects the amount of hours that aircrews must fly to maintain adequate proficiency and perform the primary mission of a particular type-model-series (TMS) of aircraft including all weather day/night carrier operations and other assigned tasks. The requested funds buy 83% PMR plus two- percent simulator contribution totaling 85 percent PMR in FY 2001. This TACAIR/ASW level is considered the minimum acceptable level. To ensure readiness and pilot proficiency, deployed crews receive 110 percent PMR; crews in work-up receive 100 percent PMR, while non-deployed crews fly at reduced level. PMR executed in FY 1999 was 83%, and in FY 2000 and FY 2001 it is estimated to be 85%.

B. 1A2A FLEET AIR TRAINING

Fleet Air Training includes Fleet Readiness Squadrons (FRS) which train replacement aircrews for each Navy and Marine Corps type/model/series in weapons tactics training, weapons delivery qualifications, carrier landing qualifications and provide services to fleet squadrons to develop and maintain air-to-air combat skills. These FRS are located throughout the country. Student levels are established by authorized TACAIR/ASW force level requirements, aircrew personnel rotation rates, and the student output from Undergraduate Pilot/NFO Training Program. Specialized schools include the Navy Test Pilot School and the Naval Strike and Air Warfare Center (NSAWC). Fleet Air Training also includes operations and maintenance of training devices and simulators. Management of the acquisition of training devices and simulators is also included.

C. 1C1C COMBAT COMMUNICATIONS

Funding provides for communications systems which directly support fleet operations including Fleet Ballistic Missile Strategic and Airborne Communications to ensure survivable communications with deployed strategic forces. Airborne communication provides a percentage of airborne communication coverage for Fleet Command and Control as an integral part of national defense strategy and in support of worldwide retaliatory forces. Operations financed in this program include aircraft operating costs for fuel, organizational and intermediate maintenance, squadron supplies, aviation depot level repairables, contract flight crew training, and training sites. Commander, Pacific Fleet has resources for all Strategic Communications (STRATCOMM) operations. Current activity within this program provides synchronized low frequency spectrum communication coverage to deployed strategic forces. To provide this support, a mix of airborne and strip-alert coverage with aircraft utilizing foreign and domestic airfields is employed.

STRATCOMM Wing One's primary mission is to provide connectivity between the National Command Authority (NCA) and the nation's nuclear forces as an element of the Strategic Connectivity System (SCS) and to maintain and operate facilities, provide services and material, and administrative control of support operations of strategic communications squadrons, and other operating forces and activities of the Navy as prescribed by higher authority.

The Mobile Ashore Support Terminal (MAST) is a self-contained portable C41 system which can be rapidly deployed to provide an initial C41 capability for a Naval Component Commander (NCC) for a Naval Liaison Detachment operating ashore. The Mobile Integrated Command Facility (MICFAC) is a complete mobile command center designed to support the NCC in Joint Operations. MAST and MICFAC have replaced the old mission TAD. Additionally, the AN/MSQ-126 Tactical Command

System, also known as the Crash Out Package (COP), is a program funded in this budget line.

Commander, U.S. Maritime Defense Zone Pacific (COMUSMARDEZPAC) is a Coast Guard activity that receives funding from CINCPACFLT for travel, transportation and other purchased services costs. COMUSMARDEZPAC is responsible to Fleet Commanders for planning and coordinating U.S. coastal and harbor defense. The Navy is responsible for peacetime financing of both supplies and equipment required to enable the U.S. Coast Guard to perform military functions upon incorporation into the Navy, or to prepare for such incorporation.

Additional programs supported are Electronic Command and Control Systems including Anti-Submarine Warfare Operations Centers (ASWOCs), Operation Support System (OSS), Navy Tactical Command Systems Afloat (NTCSA), Global Command and Control System (GCCS), and Joint Maritime Command Information Systems (JMCIS) (ashore, tactical/mobile and afloat). The Follow-On Satellite Program supports the Fleet satellite constellation and provides reliable communication links among Navy forces with EHF, UHF and SHF capabilities. Finally, this budget line also includes funding for Arms Control implementation which provides inspection support, data collection and training for the Strategic Arms Reduction Treaty (START), Chemical Weapons Convention, Open Skies and Intermediate Range Nuclear Forces Treaty.

(CNAP Comptroller, 2003)

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V. PROCESS CHANGE

A. INTRODUCTION

Many books have been published regarding change. There are a myriad of ways one could pursue in undertaking an introduction to the material. The aim of this project report is to provide the basic framework, examples, and a roadmap on the journey that is process improvement, engineering, and reengineering.

> If you can't describe what you are doing as a process, you don't know what you're doing.
>
> (Deming, 1900-1993)

A process is a series of interrelated activities which bring about a result or which are directed toward a particular aim. (LCPowers.com, 2004) Process improvement is the analysis and improvement of a process or processes that lead to change on some level within an organization. It is the level of change that determines if process improvement, engineering, or re-engineering is occurring.

B. PROCESS IMPROVEMENT

Process improvement is change on some small incremental level that enhances one or two process within one Business Unit (BU) of an organization. It is the streamlining of a process, elimination of inefficiency, or maximization of a resource within a BU. As such, process improvement occurs on the operational level. It requires no organizational strategic reassessment, no cultural shift, little to no buy-in from coworkers or leadership, it can be as simple as an individual understanding the process he/she is involved with, identifying a need for change, creating metrics to measure the effectiveness of the change, and then implementing the change. As leaders in the armed forces, it is this type of change we are most familiar with. Incremental process improvement serves to improve organizational performance and enhance quality of life. Leaders who allow this change to occur will reap the benefits of improved moral and a workforce that is constantly searches for ways to exceed organizational expectations in meeting there operational challenges.

C. PROCESS ENGINEERING

Engineering means to establish efficient work processes when work is first undertaken. One has to answer the question; is this process in need of reinvention or reengineering. Reinvention is applied within organizations seeking to merely increase efficiency (Jones, 1999, P. 81), in contrast reengineering concentrates on "starting over" rather than on trying to "fix" existing process problems with marginal or incremental "band-aid" solutions. (Jones, 1999, P. 47) The military is famous for its band-aid fixed, better known as FITREP bullets -- which is not necessarily a bad thing. It is just easier at the Echelon four and below level commands to process engineer because it is when you get above this level of command the bureaucratic side of the armed forces rears its head. And you cannot reengineer within the DoN without involving at least an Echelon Three organization.

D. PROCESS REENGINEERING

Reengineering is a top-down process where in the organization, typically driven by resource constraints and competitive market pressures, attempts to serve its customers better by reducing work process cycle time. Reengineering is intended to make quantum rather than marginal performance improvements. (Jones, 1999, P. 47) Therefore, it is critical that information technology play a role in process improvement wherever possible. It is one of the simplest medians to help people work smarter. For Process Reengineering (PR) to be successful, it must involve a commitment from the top down. There is precedent within the Navy. The Navy with the help of The Thomas Group (a Cycle Time management company) totally reengineered its Naval Aviation production process. The Naval Aviation Production Process Improvement (NAPPI) program took several years to institute, but resulted in a 30% reduction across the board in the Navy's Street-to-Fleet production process.

E. NAVAL AVIATOR PRODUCTION PROCESS IMPROVEMENT (NAPPI) CASE STUDY. A VIEW AS A USER

1. Introduction

In the late nineties, it was apparent the Navy had under assessed the number of pilots it would need to meet fleet demand. FRS (Fleet Replacement Squadron) Class sizes were down, and fleet demand had remained constant. Under accession of

Replacement Pilots (RPs) in the 1993 to 1996 year groups led to first tour lengths increasing to 43 months (target first tour length was 36 months). Additionally, TACAIR (Tactical Air) pilots were averaging about 4 years to get to the fleet and helicopter pilot averages had increased to over 2.5 years. Naval aviation was at a critical juncture as it strived to stabilize its air force and rebuild the depth in its junior officer ranks. (N88, 2000)

The bottom line was, and still is, that Pilot/NFO production is expensive; with first sea tours extending beyond the traditional 36-months, retention and moral were beginning to suffer. The Navy needed to find ways to maximize efficiency, (given its constrained resources) and get control of the production process. Lastly the Navy needed to arrest its increased first tour lengths to help improve retention and morale (Emmel, 1999).

2. Leading Organizational Change

The Navy developed the Naval Aviator Production Process Improvement (NAPPI) program. To manage the NAPPI effort, the naval aviator production team (NAPT) was established at the headquarters level, and three cross-functional teams (CFT's) were established at the operator level (owners of the NAPP). The charter of these teams is to reduce TTT while maintaining the high quality of our aviation professionals. At that time, NAPT membership included N88, CNAL, CNET, USMC DCS(air), CNP, CNAP, and CNATRA. The NAPP environment also included 26 training squadrons at 17 bases. It involved 29 types of aircraft, 3800 students (including NFOs) with 1000 graduating each year (N88, 2000).

An additional member of the NAPPI process and NAPT team was the Thomas Group (TG). A Dallas-based international production consulting company that provides solutions to significantly improve business processes for corporate and government clients. TG was contracted by the Navy (at over $6M a year) to help reduce the time to train naval aviators. The NAPPI program was implemented working with the TG using a proven methodology called “Total Cycle Time” (TCT), to drive the process improvement. Key was to identify barriers to the production process and find ways to eliminate or mitigate those barriers.

3. Gaining Control of the Process (Harnessing Time to Train)

Following commissioning, all pilots start the training pipeline at Aviation Preflight Indoctrination (API), a six week program taught at Naval Aviation Schools Command onboard NAS Pensacola, FL. From API, they attend 22 weeks of Primary pilot training. After that, the amount of time needed to complete the training pipeline varies based on the platform the student will fly. Unknown variables such as inclement weather, aircraft availability or personal issues such as illness, and order writing between schools, can also affect the time required. Discounting all of those uncontrollable elements, the process takes from 27 (HSL helo) to 48 months for strike pilots. (N88, 2000)

Developing a more efficient process, which results in timelier production of naval aviators and minimizes the negative impact on manpower management and retention, is one of the keys to improving future fleet readiness. The only effective and long-term solution to accomplish the goal of significantly reducing time to train (TTT) is to focus on improving the process itself by removing barriers to progress (N88, 2000). These barriers include policy, structure and resourcing. Leaders at the Air Force level were also realizing it was time to stop asking training commands to do more with less. Enter the TG consultants (or as they introduced themselves to me, resultants). These guys were salesman on steroids. No nonsense, down-in-the-trenches, results-oriented professionals whose goal was to work side by side us (the operators) at the commissioning sources, in the classrooms, and at the squadrons. They were not there to make friends; they were there to improve the process.

4. Corporate (Command) Culture and Performance

While at HSL-41 I was there from the beginning, providing initial interviews with the resultants, and beta testing the early metrics through the first year and a half of implementation. I worked side by side with the TG resultants to determine what metrics were important in capturing FRS efficiency and effectiveness. The environment was hostile at first. There were a lot of non-believers, no one really saw a problem, doing more with less was so ingrained in our culture no one thought anything of it. TG initial challenge was to examine the Navy Aviator Production Process (NAPP), identify inefficiencies in the process, and determine methods of improvement. TG's resultants

worked on-site with us, providing training to analyze operations, and helped implement their speed-based improvement strategies.

The goal is to apply the team's focus on identifying and eliminating barriers to production improvement while standardizing production efforts throughout the naval aviation training process (VT's through FRS). With an overall goal to involve all training process owners from accessions through the FRS (street to the fleet) in rapidly implementing a new standardized approach to production systems. "This approach is similar in scope to the benefits achieved with the implementation of NATOPS" (N88, 2000).

Overcoming cultural bias is never easy; it was a challenge to get the department Heads to discuss the issue seriously. At the time we had never graduated a class late (so of course we did not have a problem). The problem was, we had never truly met fleet demand either. Due to under accession, the training command was not delivering the number of students our load demand called for. Therefore it was easy to get them in and out on schedule because our resources were not being tested.

> In other words our west coast LAMPS (Light Airborne Multipurpose System) squadron requirement called for approximately 65 first tour aviators annually. Production at that time was approximately 45-50. The fleet squadrons rarely complained because we had always been accustomed to doing more with less, and first tour pilot extensions had become routine (approx 43-45 months) and were always approved.
>
> (Emmel, 1999)

We needed to get a hold of our production efforts, implement process improvements, and monitor results. To a stick-and-rudder guy, tracking TTT (Time to Train) requirements is a convoluted process and about as desirable as watching paint dry. But with the metrics incorporated in the CockPit (C/P) charts (designed to track the people, parts, and planes required in Pilot/NFO production), we began to get our hands on what it takes to raise production levels up to those necessary to meet fleet demand.

As the Training Department became better at interpreting the C/P charts data, other departments started to take note. Maintenance recognized that the number of personnel, parts, and aircraft required to meet production might not be sustainable

without real change. Training was realizing its own inefficiencies. The training syllabus would have to be streamlined to improve efficiency, maximize utilization of limited resources, and minimize TTT. It became abundantly clear; we could no longer accept extended TTT as the cost of doing business. We streamlined lectures, created more flexibility (like scheduling trainers and classroom requirements on weekends). And through the C/P charts we could measure whether or not or methods were successful.

5. Measuring Effectiveness

In the early nineties, squadrons found ways to uniquely spin their accomplishments. Most of their methods for doing so were subjective and they were not standardized across community lines. The Cockpit charts provided a means for squadrons to measure their effectiveness in a standardized manner across the board. On a monthly basis, Squadrons rolled their C/P chart data up the chain of command (COC). The data covered Manpower issues, Aircraft & parts, and Key performance (production).

Once each department understood the deliverables, it was not difficult to combine the data into the final product. Production metrics gave each training squadron a standard means of measuring effectiveness. These were briefed to the FRS CO, Wing Commodore, and ultimately all the way up to the Air Board monthly.

6. Effectiveness vs. Efficiency

While analyzing the key measurements chart (production), the manning and Aircraft charts provided the means to identify inefficiencies, shortfalls, or barriers to production (Emmel, 1999). Issues the FRS could not resolve were elevated up the chain to give their COC a chance to help resolve the issue. I personally cannot say enough about this new system of doing business. The Navy finally has a method of objectifying performance. Publicly this has begun to win acceptance, but off the record its commands see this as a double edged sword (i.e., COC can use the data to call commands on the carpet based on C/P chart analysis). Bottom line: This tool is helping keep the press on production and eliminate inefficiencies by enabling commands and those in their COC to identify and even predict where problems are or are developing in the production process. We can now focus on training and fixing the problem instead of spending all our time trying to figure out what the problem is.

7. Seeing is Believing; Believing is Seeing

Naval Aviation has always prided itself in its ability to adapt, improvise, and overcome. That being said, its methods are pretty conventional. The Thomas Group brought an out-of-the-box (in military circles anyway) approach to production management into an old school system. And it was no big surprise that it was not initially well received. Four years after its inception, I noted the C/P charts were still met with raised eyebrows, but there is no denying the effectiveness of this tool. It enabled the training command(s) to get a handle on the process of producing aviators. Production results have been objectified. Squadrons can now isolate barriers to production, take pro-active steps to correct, and then monitor for desired results. Only time will tell if stakeholders will totally buy-in to this approach. It is clear the stakeholders above the FRS level have, and while once a skeptic, the Thomas Group approach made a believer out of me. I can also add (with absolute certainty), without the flag level support this reengineering effort received; the NAPPI would have failed.

F. CNAP COMPTROLLER PROCESS ENGINEERING EXERCISE. A CONSULTANT VIEW

1. Introduction

The project completed by team three was quite different than what anyone thought it would be. After a three week delay at the start of the course, a project involving reengineering the Flight Hour Program (FHP) for the Commander Naval Air Pacific (CNAP) was selected by the team. The FHP program is a well documented and often studied process that due to its large scope is a constant target for reengineering to help further reduce costs and optimize the expense of every dollar.

The budget process is in need of process reengineering. A number of the goals of reengineering are applicable in the budget process. Specifically: the need to increase customer satisfaction (up and down the Chain of command), attain greater efficiency, and optimize costs. Additionally, with greater emphasis being placed on the accuracy of our budget proposals, the need to not exceed cost estimates, and the need to achieve the greatest level of readiness possible given the financial constraints necessitates the need to get a hold of this process.

After an initial meeting with Dr. Lawrence Jones (MBA project sponsor), Glenn Cook (IS4220 course instructor), Capt Moore (CNAP Comptroller), and Clinton Miles (CNAP Deputy Comptroller), it was determined that a process reengineering effort involving the FHP program would be too broad in scope. We learned CNAP was working another issue involving Flight- hour Other (FO) management with OPNAV and it was agreed upon that reengineering the FO program was a more manageable task given the constraints of the IS4220 course of study.

2. Project Preliminary Findings

Myself, LT Mike Wagner, and LT Ashton Feehan traveled to CNAP (located on NAS North Island in San Diego CA) on an information gathering/ fact finding mission. We quickly realized there was more to this issue than discussed during the initial phone conference. We essentially learned there was no FO program. FO costs are not included in the OP-20. These "other" costs represent outlays for flight simulator operations, Fleet Replenishment Squadron operations, civilian labor, administrative supplies, material, equipment, maintenance service contracts, and expense for travel and lodging associated with pilot and crew Temporary Additional Duty (TAD). While most of the costs are considered essential to Naval Aviation, there are no FHP resources programmed by N-88F for FO. FO is a "level-of-effort" program where costs are incorporated in the Major Claimants' regular budget submission. The Air Type Commanders (TYCOMs) provide input for the development of this budget, based on their forecast requirements for the FO category of funds (Last years spending plus a predetermined Inflation Rate). The FO category has consistently been under funded and has been a constant drain on the FHP dollars as that funding gets reprogrammed to meet the FO shortfalls throughout the budget cycle. There are numerous additional programs included in FO, but we will forgo the discussion as non value added to this project report.

Further investigation revealed that unlike the FHP program, there was no "As-Is" process in place. Current management of FO is an ad-hoc effort lacking standardization and verification. The team could easily have spent the term just developing an accurate process map of how the comptroller department is managing FO. Due to the course constraints and the busy time of year in the budget cycle even that was not an option. We agreed upon a rough process map (Appendix A) and after much deliberation greatly

narrowed the scope of the project to creating a web-enabled database prototype that can generate Fund Summary Reports (FSR) and manage the CNAP OPTAR Authorization(s) Process. Subsequently, we dropped the OPTAR Authorization(s) Process portion due to data unavailability. The "As-Is" process map for generating the FSR is shown in Appendix B.

3. Existing Process

The FSR is currently produced in manner that brings into question its timeliness and accuracy. Essentially what occurs is similar funding data is tracked in various manners with no standardization. Unit Transmittal Listings (TLs) are received 4 times a month and input into the Standard Accounting and Reporting System, Field Level (STARS-FL). This lets CNAP know what has been spent. CNAP Accounting Department uses Financial Resource Management System (FRMS) to reconcile their accounts. FRMS and STARS-FL data is integrated into an Excel spreadsheet that is vulnerable to formulas and formats being written over. Ultimately personnel spend so much time checking and validating the data that they roll into the follow-on week's data timeline having never submitted or completed a report. This observation was provided and validated by the Deputy Comptroller.

In Appendix B, the red dashed box indicates the actions performed in the FRMS database (FR 03, FR 04, FR 05). The blue dashed box indicates the actions performed in the STARS-FL database (FR 01 and FR 02). The remaining actions are generated by hand and with various Excel files. These hand-generated tasks (FR 6, FR 7, and FR 8) are where the most difficulties occur and where our solution can offer the most benefit.

4. "As-Is" KVA Discussion

The core processes listed in the "As-Is" process map (Appendix B) are further detailed in our KVA spreadsheet (Figure 6) and are analyzed to measure their productivity. We included the number of people involved in each sub-process, the time it takes to complete the process, the number of times the process "fires" on a weekly basis, and the time it takes to learn the knowledge required to perform the process. These four pieces of data were used to determine how much productivity each sub-process adds to the overall process.

This productivity measurement is a ratio called Return On Knowledge (ROK). We derive ROK in our spreadsheet by dividing our benefits by cost. In our spreadsheet, this is total revenue divided by expenses. Revenue is the "Actual Learning Time (hours)" multiplied by number of people it takes to complete the sub-process (#People Involved) and the number of times the process is repeated (Times Fired). This is divided by "Expense", which is calculated by multiplying "Time-To-Complete per firing" by the number of people involved.

The five gray colored processes in our "As-Is" KVA Spreadsheet indicate where the FSR is generated. These are the areas where we believe that Information Technology (IT) could most improve the overall process. Currently these steps are performed by an Excel spreadsheet that requires queries, pivot tables, refreshing, and in some cases manual entry of data. Our KVA

Group Responsible	Subprocess	# People Involved	Times Fired (Occurrence per week)	Time to Complete per firing (hours)	Actual Learning Time (hours)	Total Revenue (ALT*People Involved*Knowledge Fired)	Expense (Man-Hours Expended) (Time to Compl.*People Involved)	ROK (Revenue / Expense)
Budget Analyst	Input CPF Expense Limitation Obligation Auth. By Unit into FRMS	2	1	1	8	16.00	2	80%
Budget Analyst	Input OPTAR obligations into FRMS	2	1	1	2	4.00	2	20%
Budget Analyst	Input OM6 Authorizations by Unit into FRMS	2	1	1	2	4.00	2	20%
Accounting	Reconcile Weekly Transmittal Listings in STARS	8	1	8	8	64.00	64	10%
Budget Analyst	Query Stars to generate obligations	2	1	1	2	4.00	2	20%
Budget Analyst	Funds Status Report (FSR) updated from FRMS and STARS	2	1	0.17	2	4.00	0.34	118%
Budget Analyst	Excel Program calculates Required Fields in FSR	2	1	0.01	0.01	0.02	0.02	10%
Budget Analyst	Update DATE field on FSR manually	2	1	0.02	0.02	0.04	0.04	10%
Budget Analyst	Reconcile FSR	2	1	1	8	16.00	2	80%
Budget Analyst/ Asst. Comptroller	Review FSR	5	1	1	8	40.00	5	80%

Total ROK 238%

Figure 7 "As-Is" Knowledge Value Added Data (From: Team 3, 2003)

spreadsheet, shows these five steps yielding a 237.6% Return on Knowledge. While this is not a modest figure, we recognize that there is still potential for improvement. Implementing a web-enabled database eliminates the possibility of data transfer errors or manual input errors. The functions that currently require human input will be seamless and transparent to the user.

5. "To-Be" KVA Discussion

As demonstrated on the "To-Be" KVA spreadsheet (figure 7), replacing the Excel version of the FSR with our more robust web-enabled database has reduced the previously required five steps to one step (listed in gray). The time to complete these steps has been reduced from 2.2 hours to a mere .25 hours (15 minutes). The reduction in number of processes and time to complete them causes our ROK to double from 237.6% to 481.2%. The significance is not so much in the numbers themselves as it is in their ratio. In a relative sense, this is a substantial improvement.

Group Responsible	Subprocess	# People Involved	Times Fired (Utilized per week)	Time to Complete per firing (hours)	%IT	Actual Learning Time (hours)	Total Revenue (ALT*People Involved*Knowledge Fired)	Expense (Man-Hours Expended) (Time to Compl.*People Involved)	ROK (Revenue / Expense)
Budget Analyst	Input CPF Expense Limitation Obligation Auth. By Unit into FRMS	2	1	1		8	16	2	80%
Budget Analyst	Input OPTAR obligations into FRMS	2	1	1		2	4	2	20%
Budget Analyst	Input OM6 Authorizations by Unit into FRMS	2	1	1		2	4	2	20%
Accounting	Reconcile Weekly Transmittal Listings in STARS	8	1	8		8	64	64	10%
Budget Analyst	Generate Funds Status Report	2	1	0.25	100%	12.03	24.06	0.5	481%
Budget Analyst/ Asst. Comptroller	Review FSR	5	1	1		8	40	5	80%

Legend: 5 steps from the As is spread sheet reduced to one step.

We have increased our Return on Knowledge from 237.6% to 481.2% by reducing time of completion from 2.2 hours to .25 hours

Figure 8 To-Be Knowledge Value Added Data (From: Team 3, 2003)

6. Our Solution "To-Be"/ Prototype Discussion

To narrow the scope and to enable the team to complete the project within the time constraints of the course, we created our improved version of an FSR, ours being an

automated web-enabled database driven report vice a manual Excel spreadsheet. This can provide Management a tool that would enable the leadership (Comptroller, Deputy Comptroller) the capability to view the current status of the FO budget at any given point in time. This is a significant improvement over the process that is currently being used. Implementing our prototype, however, would simply be a Band-Aid. The much larger issue is that CNAP Comptroller's Office is a prime candidate for a more "radical" Business Process Reengineering (BPR) project because there is no standardization, no verification, and no validation processes in place within the organization to help them successfully manage over 3 billion dollars a year in CNAP FHP/FO funding. Our incremental solution is depicted in Appendix C. The areas targeted were:

- Providing a method to input and edit data from the budgeting process, FRMS and STARS-FL.
- Display the overall budget status in an easily readable format.

We determined that by utilizing web-enabled forms, we could reduce the possibility of inaccurate reports. The current process is manual data entry in an Excel spreadsheet. Analysts often end up corrupting the data by accidentally deleting formulas. Our web-based solution takes the access to formulas out of the control of users.

A dummy database was created to represent the data from FRMS and STARS-FL. Both the database and web portal were named, "COMNAVAIRPAC." The better way to perform this process would have been to build Structured Query Language (SQL) statements to automatically draw this data from the existing databases (FRMS & STARS-FL) to avoid redundancy in data input. We were unable, however, to gain access to these databases. The FRMS is proprietary and developed by CACI International Incorporated who also developed and maintains the Aviation Cost Evaluation System (ACES). ACES is used to manage the Navy's Flight Hour Program. The legalities of creating an interface would have to be researched before any further development could be undertaken. The Database Schema and several screenshots of the web Comptroller's Portal are included for review in Appendix D.

Our solution turned out to be a very basic representation of the current FO budget status. It would be useful to create drill down and query capabilities for the reports. The "Status" page however, turned out to be far more complicated to create than we had

originally anticipated. Visual Basic Script had to be used to sum up all of the records since Dreamweaver does not contain this capability. This coding turned out to be fairly complex and prohibitive to creating a query capability within our time and knowledge level constraints. In addition, making the database more complicated to provide drill-down capability would create the requirement to enter data multiple times. As a "proof of concept", the code and database of our prototype work fine and the client saw the benefits of moving to a similar type of web-enabled comprehensive report.

7. Project Final Considerations

We recognize our solution to build a new database was not the most effective method to handle the problem, but given the constraints we faced it was a viable solution. There are other methods to gain access to the necessary information within FRMS and STARS-FL databases. A tool like Crystal Reports (already used within the CNAP Comptroller Office) is a technology that can drill down into FRMS and STARS-FL. The FRMS contractors we spoke with have the necessary skills to exercise this option, but they have not been contracted to do this.

It is generally viewed that the entire DoD budget and execution process needs to be radically overhauled (case and point are the Rumsfeld efforts currently underway). As a result, it was difficult to apply the KVA to broken and non-existent processes. In order to make the web database prototype fully functional, the first step should be to revise the database interface between FRMS and STARS-FL, so that there is a single and consolidated input to the website or presentation and tracking tool. This would allow the data to be manipulated and displayed in a variety of ways. Contractor support is already in place to perform this function and just requires the funding. This project only focused on the Flight Other (FO) account, but the follow-on web database could easily accommodate any or all of the other accounts under CNAP control. In order to realize significant KVA increases, process control must be implemented throughout the organization. Once this occurs, then the organization can be truly analyzed for inefficiencies and ineffectiveness. Our team's initial analysis of the CNAP organization has provided the foundation for subsequent analysis and research.

G. KEY CONTRIBUTORS IN PROCESS IMPROVEMENT/ ENGINEERING/ REENGINEERING EFFORTS

For the purposes of discussion, Process Improvement, Engineering, and Re-engineering are interchangeable in this section. Because regardless of the scale of change, all of these factors play a role, it is merely a question of the magnitude of the role. There are several noted key contributing factors that are necessary for any process improvement to be successful:

- Commitment to reform at the top of the organization.
- A meaningful, clear vision, a set of goals, and a plan of action.
- Organization-wide understanding of the vision, goals, and plan of action.
- A sense of urgency.
- An understanding of obstacles to change and persistence in overcoming them.
- Performance measures and a willingness to learn from one's mistakes.
- Recognition of successes and extraordinary efforts.
- Institutionalization of continuous improvement.

(Jones, 2001)

1. Committed Leadership

This is the most critical aspect of any process improvement effort. The surest guarantee that a process improvement effort will fail is if management is fails to strongly endorse the effort or more dangerous, is overtly indifferent. While it was not clearly communicated out of the gate in the NAPPI case, by the end of the 2nd quarter there was no doubt the highest levels of leadership of OPNAV was clearly committed, and the results showed. With the CNAP Comptroller case, the interest was clearly there, but competing priorities kept any process improvement on hold.

2. Clear Vision and a Plan of Action

Often, the best of intentions fail in the absence of clear direction. An articulate, inspiring vision statement from the highest levels of leadership where the desired end-state is clearly articulated is essential to successful implementation of BPR. Likewise, managements Plan of action should be in alignment with leaderships Vision statement and provide a roadmap outlying the direction, milestones, and timelines the organization

must meet to effectively achieve senior leadership's vision and successfully navigate the murky waters of BPR. BPR is hard, and can cost and organization large amounts of intellectual capital to see it through prior to any real process improvement gains being realized. The absence of a Vision Statement and a Plan of Action can lead to an organization chasing the preverbal Red Herring, loosing their direction, and ultimately seeing what might have been a successful BPR effort failing. OPNAV and a chorus of flag level leadership articulated the vision and they along with senior level resultants communicated and monitored the plan of action. A suggested plan of action is offered later in the project report for CNAP's Comptroller.

3. Organizational-Wide Understanding

The best way to ensure a clear understanding of an organizations vision and plan of action is to articulate and drive them from the top. Senior leadership should look for opportunities to show their commitment to BPR whenever possible. Senior leadership often tends to lend support to BPR at the beginning of the effort, but routinely delegates all aspects of the effort to the line/functional manager level to carry it out. When what they should do is stay engaged in the effort. Let the line/functional managers run with the day to day management of the BPR effort, but senior management must be visible and vocal in their efforts to stay informed. Then they must articulate this level of interest in the same manner they would articulate interest in any revenue enhancing measure the organization is undertaking. Leaders who ensure, people in their organization are in alignment with, and understand the importance and significance of a particular goal are far more likely to reap the successes of their organization achieving the goal. BPR is no different and should be treated accordingly by senior level leadership.

4. A Sense of Urgency

On the NAPPI side, it took months for the operational layer to realize this effort had flag level attention and was going to happen. Once this flag level sense of urgency was communicated; as with any military unit; the change was great and immediate. Within the CNAP Comptroller, the sense of urgency existed at the executive level but was not being conveyed in an effective manner down the chain of command. The absence of a sense of urgency creates an environment where nothing gets done. Management must communicate this sense and provide the education necessary to

reinforce the reality and need for the sense of urgency. The momentum created through a sense of urgency can go a long way in overcoming obstacles to change. As observed in the NAPPI case study.

5. Understanding Obstacles to Change and Persistence in Overcoming Them

There are many motivators to Obstacles to change. They can be survival related, political, rice-bowl, or even just plain old laziness. What ever the reason, management has to recognize that in some form obstacles to change will exist, and they need to pro-actively move to overcome them. Providing performance measurements and rewards systems are two positive methods to overcoming obstacles to change. For whatever reasons, the Thomas Group resultants seamed ill prepared to deal with the obstacles to change. However, the performance measures provided and monitored in the NAPPI effort proved very effective in overcoming obstacles to change. While not implemented due time, the FSR could certainly attain the same results for CNAP's Comptroller.

6. Performance Measurement and Willingness to Experiment

This is a difficult and essential requirement to process reengineering. Metrics must be objective, tangible, and measurable. With considerable effort, the NAPPI team produced and implemented a set of metrics that were acceptable across the different aviation communities (TACAIR, Fixed Wing, and Helicopter). This also provided a standardized means to measure effectiveness across community lines that had not previously existed for OPNAV. This factor could be encompassed in any IT related solution agreed upon by the Comptroller and his staff.

7. Recognition of Successes and Extraordinary Efforts

This is where leadership can have its greatest impact on reengineering efforts. Generating an understanding is not enough. Recognizing those who are moving the organization (in a positive way) in the direction of change is essential to getting buy-in and to reinforcing (and rewarding) employees who embody the sense of urgency communicated by management.

8. Continuous Improvement

The real truth about BPR is that it is a journey not a destination. For long term success it must become a part of the organizations culture. Anything less and the effort

becomes just the latest fad to be thrown into the proverbial wastebasket. Equally important to getting on and staying on the path of continuous improvement is education and training. It is critical staffs are trained in the correct implementation of the new process and that a training plan is in place to ensure standardization is maintained throughout the life cycle of the process.

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VI. ENTERPRISE RESOURCE PLANNING SYSTEM (ERP)

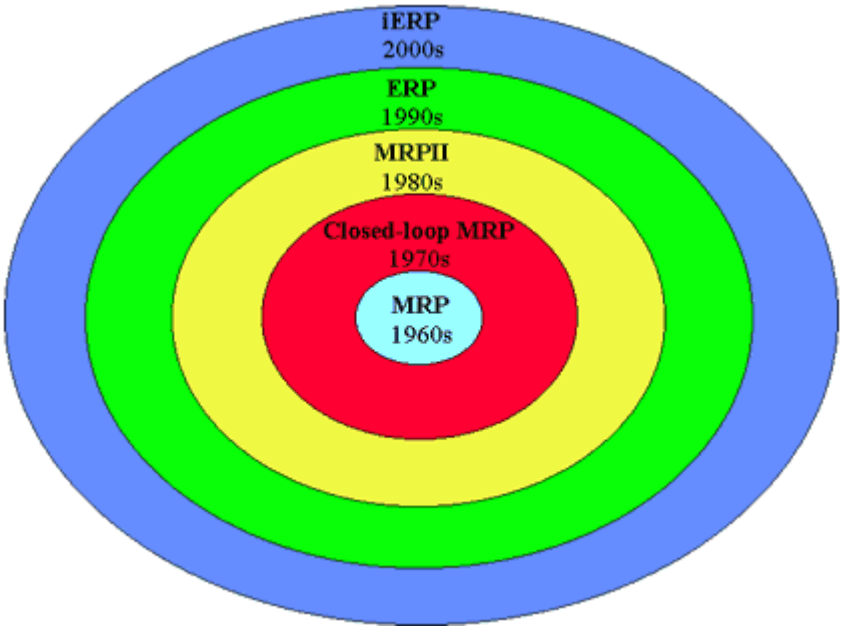


Figure 9 ERP Evolutionary Timeline (From: Jakovijevic, 2000, P. 8)

A. BACKGROUND

The foundation of Enterprise Resource Planning (ERP) dates back to the 60's in the manufacturing sector and its evolution encompasses Materials Requirement Planning (MRP), Closed Loop MRP, MRPII, ERP, and IERP over the course of a 40 year period and continues to evolve as ERP systems migrate to the internet as ERPII systems are brought on line.

1. Materials Requirement Planning (MRP)/ Closed Loop MRP

The focus of these systems was in the area of inventory control. It was developed in the age of the Reorder Point System (ROP) where the assumption was that the customers order/reorder habits would be consistent. MRP demonstrated its effectiveness in reducing inventories and reductions in production and delivery lead times. MRP enabled manufacturers to plan for "having the right materials at the right time" (Jakovijevic, 2000) in the manufacturing process. However there was no accounting or financial planning segments as of yet. As computing capacity evolved and became more

financially affordable the market was able to address the short comings of MRP with the development of Closed loop MRP. Closed Loop MRP incorporated the necessary accounting and financial planning segments MRP lacked. Additionally, Closed Loop MRP took into account production capacity constraints (previously presumed to be infinity), and Closed Look MRP came to be called Capacity Requirements Planning (CRP). (Jakovijevic, 2000)

2. Materials Requirement Planning II (MRPII)

Prior to MRPII the basic component packages of MRP and CRP where not fully integrated. Technology had not allowed it but, once again technology evolved at a pace that enabled MRP/CRP to continue its evolution.

MRPII closed the loop with the financial accounting and financial management systems. The American Production and Inventory Control Society (APICS) defined MRPII as follows:

> MRPII is 'a method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning in dollars, and has a simulation capability to answer "what if" questions. It is made up of a variety of functions, each linked together: business planning, sales and operations planning, production planning, and the execution support systems for capacity and material.'
>
> (Jakovijevic, 2000)

For the first time, organizations could have an integrated business system providing;

a. Visibility to material requirements and capacity limitations driven from a desired operations plan.
b. Enabled input of detailed activities.
c. Translated all this activity to a financial statement, and suggested actions to address those items that were not in balance with the desired plan.

It the belief that 'good information leads to good decisions' then the integrated nature of MRPII system certainly provides a competitive advantage for functional areas of organizations which are able to incorporate the system. However, not all functional areas of the organization could use the MRPII system. As other functional areas requested help, systems were developed within the organization to help support additional functional areas. For example, Accounting and Finance had a set of programs

that helped it manage the general ledger, accounts payable & receivable, as well as capital assets and financial reporting. Where MRPII integrated manufacturing programs, these accounting programs were combined to form an integrated system for accounting. Sales, Engineering, Purchasing, Logistics, Project Control, Customer Service, and Human Resources followed suit and each developed their own individual (see the problem) sets of integrated computer systems. Unfortunately, these disparate systems were unable to interact and exchange information. Any exchange information between these systems was time consuming and error prone. (Jakovijevic, 2000)

3. ERP/Internet-Based ERP

By the 1980's and early 1990's it had become intuitively obvious that segmented integration within an organization is problematic. While organizational business units thrived, the organization as a whole often experienced problems such as; cost overruns, process redundancy, organizational miscues, conflicting and untimely information flow to organizational executives to name a few. During this period "time to market" had become a driving force in measuring organizational success. This trend highlighted the need for business units to adopt an enterprise wide view within their area in order to attain and maintain a 'time to market' competitive advantage. Technology and software development tool advancements coupled with reduced hardware costs paved the way to the development of ERP products.

Figure 10 Typical Commercial ERP Integration Diagram (From: Dougherty, 2001, P. 5)

ERP is a software application capable of instantly accessing and updating information shared among business units. The software suite is generally comprised of industry accepted best practices for managing an organization. These software applications help organizations manage the important parts of their business (Figure 9), including production, manufacturing, and maintenance planning; operations, inventory, facilities, and order management; interacting with suppliers, providing customer service; and more recently finance, and human resources application modules.

Typically, an ERP system uses or is integrated with a relational database system run on a client/server architecture. This allows everyone to view and use the same data, i.e., the actions of one department's program will drive the actions elsewhere. (Jakovijevic, 2000) ERP can help companies become leaner by reducing costs, improving efficiency, standardizing and accelerating the flow of information. The next logical step is to expand the enterprise view through the use of the internet which is what is taking place on a major scale today.

B. KEYS TO SUCCESS

There are five success factors necessary to help influence the chances of successfully integrating ERP into ones business Model.

1. Recognize Out of the Gate, it is About the People not the Software

Most ERP implementation failures can be attributed to businesses not taking into account the people side of the equation. With large-scale investments of this type it is imperative your ERP choice is in alignment with your business model, and your people do their job. You also need to plan on the amount of training that will be involved and how employee turnover will figure into the implementation.

2. Analyze and Formalize Your Own Business Best Practices from the Enterprise Level, Down to the Customer Service Representative

If your business model is flawed, this increases the chance of the ERP system failing. The reasons are two fold. First, ERP is in essence a "best practice" business tool. If your model is flawed, then your people will invariably fight the new technology. Additionally, because of the divergent systems, if will invariably take more time to implement the system, and that can significantly increase the cost of implementation as well as your revenue. Working groups need to be formed in the different divisions, departments, etc…to capture what your businesses "best practices" are. This should include a model/ vision for the future of what your people feel your best practices should be. The middle management needs to work hand in hand with the working groups. It is middle managements job to sell their product to the board…in the end, the process is completed when the organization (CEO, Management, Core employees) have achieved "buy-in" to their vision of "best-practices". Armed with this new knowledge, a business can then decide if an ERP product is right for them and if the answer is "yes", which one.

3. Leadership Endorsement (or Enforcement) of "Best Practices"

Not everyone will ultimately buy in to this new model. It is the job of management and the CEO to set the tone, to lead the change in the underlying culture and support those in middle management leading the effort. Only a united organization is capable of successfully implementing change on this scale.

4. CRM Must Be a Consideration

ERP is largely a behind the scenes tool designed to optimize how departments work together (through a common database). Current models (this is changing) do not address the customer side of the house, nor does it address the e-commerce side of the house. CRM is the answer to that side of the question but is does not readily integrate into current CRM systems. This critical key should be addressed as early into the process as feasible, and should impact which vender you choose.

5. Publish a Roadmap with Measurable Goals

"How do you know where you're going, if you do not know where you have been?" ERP implementation is not easy, by all accounts it is down right painful and as apposed to sale rep estimates on implementation time (3-6 months) it is more on the order of 1-3 years. A business needs to have a detailed road map to fall back on when things get tough. It needs to include negotiated measurable and review-able criteria. This will help keep everyone focus in the right place during the dark days (and their will be many) of the implementation process.

VII. ERP WITHIN THE DEPARTMENT OF THE NAVY

A. ORIGIN OF NAVY ERP

ERP within the Department of the Navy (DoN) can trace its roots back to 1997 when the Secretary of the Navy mandated that the Navy begin drafting a DoN strategic business plan as a means of addressing reform in the business affairs of the Department. This led to the establishment of the Revolution in Business Affairs (RBA). In September of 1998, the RBA established working teams designed to identify short and long range goals and plans for reaching the identified goals. The Commercial Financial Practices Working Group, led by VADM John Lockard (then COMNAVAIR), was one of the first working groups to be chartered. (ERP Website, 2004) The working group members were quick to realize the need to expand beyond financial business practices alone, rather adopt an enterprise view and look at a wider range of business practices. This led to a subsequent name change of Commercial Business Practices (CBP) Working Group. The group focus was in the areas of; examination of the state of commercial sector business practices, understanding the direction of changes in business practices, and developing a

way ahead for the DoN. ERP was a component in the CBPs solution for the DoN. Specifically, the group believed this alternative would

- Provide quality information for decision making to all levels of management
- Improve efficiency and effectiveness (better, faster, cheaper) through re-engineered business processes and integrated information provided to managers
- Manage costs for maximum reallocation of resources to recapitalization and modernization efforts
- Enable compliance with statutory requirements: Government Management Reform Act (GMRA), Government Performance and Results Act (GPRA), Chief Financial Officer's (CFO) Act, etc.

(DoN ERP Website, 2004)

The CBP recommended the DoN conduct six ERP pilot programs to explore the applicability of implementing a Navy wide ERP solution; four were adopted.

B. CURRENT/LEGACY ERP SYSTEMS

A succession of SECNAV's has reiterated the importance of advanced Technology and Business Practices spearheading the DoN's efforts in reducing costs and streamlining processes. With the end result of these efforts enabling more dollars to be shifted to improve naval combat capability and quality of service. Given the desired end state and as mentioned earlier, six programs were recommended to re-engineer business processes and implement ERP solutions to cut operating and business costs across specific targeted areas within DoN. Of the six ERP programs, four were commissioned and are the legacy systems active in the DoN. The systems are SMART (targeting Aviation Supply Chain), SIGMA (targeting program management), NEMAIS (targeting Regional Maintenance), and CABRILLO (targeting Warfare Center Management) and are discussed below.

1. CABRILLO (Navy Working Capital Fund Management "NWCF" Pilot Project)

CABRILLO went live in July of 2001 at Space and Naval Warfare Systems Command (SPAWAR). The pilot serves 3,500 users and has resulted in over 30 legacy business systems being retired at the Systems Support Center (SSC) in San Diego, CA. The savings have been dramatic. The ERP Vendor selected was SAP. SAP is a German based company founded in 1972 and is the recognized leader in providing industry

specific, collaborative business solutions. This program is managed by SSC and the system integrator was PriceWaterhouseCoopers (now IBM). IBM's team consisted of Computer Sciences Corporation (CSC), Unified Industries Incorporated (UII), SAP, and Logicon, Inc. The NWCF ERP pilot addressed the integration of the following business practices and processes:

- Project Management
- Financial Management
- Procurement Management
- Asset Management
- Human Resource Management
- Strategic Planning

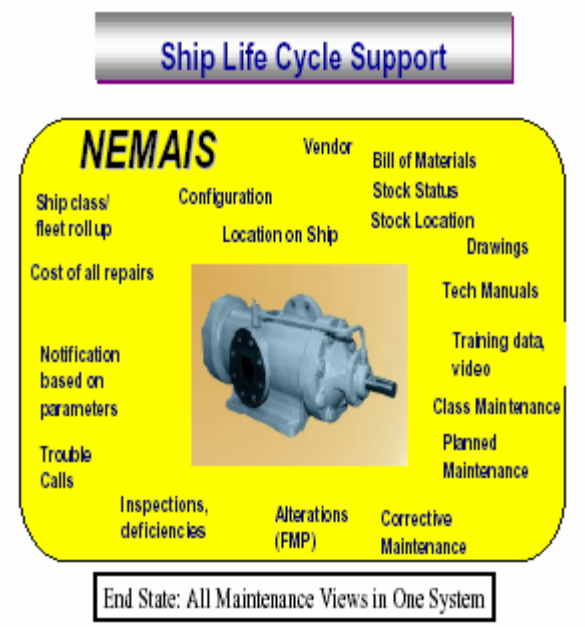
Subsequent experiences led to the incorporation of Business Warehouse and Supplier Relationship Management into the production system. Specific accomplishments include:

- Online for 2+ years and stable
- More than 6 million transactions processed
- User acceptance and competence continues to grow
- Civilian End Strength reduction of 15.8 work-years (FY 02)
- Defense Financial Accounting System (DFAS) zero error rate for data
- Contractor reductions = $3.02 million
- Legacy system reduction: retiring 59 of 72 legacy systems, applications and manual processes
- Business cycle time required from requisition to purchase order dropped from 44 days to 44 minutes for Electronic Catalog buying
- ERP knowledge, as measured by hours of training received:

  Goal = 38,000 hours Achieved = 41,500 hours

(ERP Newsletter Issue 1, 2004, P. 4)

2. NEMAIS (Navy Enterprise Maintenance Automated Information System)



Operational since June of 2002, the system is operational in three locations (Mid-Atlantic, Southwest, and Southeast regions) and will be rolled out in Japan and Pascagoula, MS in 2005. NEMAIS is a joint partnership between NAVSEA (Naval Sea Systems Command) and CFFC (Commander Fleet Forces Command) targeted to optimize Intermediate Level (I-Level) maintenance support for the warfighter. The improvement and standardization of business processes across I-Level maintenance activities was designed to yield the following benefits:

- Commodores, maintenance activity commanders, planners and material managers will know the real-time maintenance and material status of ship's equipment from a common information base to better assess current and future readiness.
- Maintenance activity commanders will have real-time indicators of their priorities and resources available to maintain the fleet.
- Type Commanders will have improved real-time information to more effectively allocate scarce maintenance dollars.

(ERP Newsletter Issue 1, 2004, P. 4)

The efforts were better than expected. In fact, the re-engineering efforts resulted in a 43% reduction in the number of individual processes performed. This was accomplished through the alignment of distinct redundant sub-processes within larger separate core processes and through the automation of these processes with the automated tools inherent in ERP systems requiring less transfer and verification of information. SAP was the ERP vendor for the core software and IBM and its team of partnering companies (BearingPoint, Inc. – formerly KPMG Consulting – SAIC/AMSEC, and CACI) served as the integration team. Specific accomplishments include:

- Online in Mid-Atlantic Region for nearly 2 years and stable; also implemented in Southwest and Southeast Regions; SRF Japan "Go Live" scheduled for Summer 2004
- NEMAIS in January 2003 completed 3 weeks of Independent Third Party Testing, which found no material deficiencies during Blue Book review and recommended immediate rollout to obtain ROI on retiring 150 legacy systems
- NEMAIS solution is consistent with the Future Logistics Enterprise (FLE) Domain Architecture and the Financial Management Enterprise Architecture (FMEA), which is now called the Business Enterprise Architecture (BEA); NEMAIS passed BEA-LOG compliancy certification in May 2003
- NEMAIS integrated data base now includes data from 215 Navy ships (non-nuclear only)
- More than 76,000 jobs have been inducted into the system, of which more than 54,000 have been completed
- Material inventory savings achieved from identification, redirection and reduction of "gold piles" (unused parts left over from previous jobs)
- 18 military personnel reassigned from administrative and support to direct maintenance and repair (production) work (June '02 - June '03 Mid-Atlantic Region only)
- Eliminated paper funding documents
- Total actual benefits of NEMAIS in Mid-Atlantic Region, including above = $6.33 million
- Legacy system reduction: 3 local unique information systems discontinued to date (June '02 - June '03 Mid-Atlantic Region only). NEMAIS is JFMIP compliant, capable of replacing hundreds of legacy systems, applications and manual processes
- Core processes reduced in number from 203 in legacy to 91 in NEMAIS; support processes reduced from 132 in legacy to 112 in NEMAIS
- System automatically prevents over obligation of funds: warning at 85% obligation, "All Stop" at 100% obligation
- NEMAIS is a single, common maintenance process fully consistent with SHIPMAIN vision of entitlement (CFT1)
- NEMAIS is building the I-Level Master Specification Catalogue (MSC) (CFT2)

(ERP Newsletter Issue 1, 2004, P. 4)

3. SIGMA (Program Management)

SIGMA was first implemented in October of 2002. SIGMA has become the system of record for NAVAIR's Financials, Program Management, Time and

Attendance, Awards, Training and Employee Performance Evaluations. SIGMA provides accurate real-time information in one integrated system. The project encompasses a financial system of record for a 23 billion dollar annual budget. Over 20,000 users at 10 primary sites and 126 global locations share common processes and business rules, a single set of data, and near real-time access to career development and training human resources information. SIGMA is comprised of SAP core software with "bolt-on" software packages to handle tasks such as Activity Based Costing, government form generation and document management. SIGMA ERP also interfaces to 18 mandated legacy DoD and DoN systems. Specific accomplishments include:

- Operational ~1½ years with more than 19,000 users at 10 primary sites and 126 global locations
- Fully operational Disaster Recovery System in place
- Sigma is operated within the NMCI environment
- Retired 51 of 79 planned legacy systems
- Financial system of record for entire $23 billion annual budget
- NAVAIR Travel System is fully integrated with Sigma for Human Resources and Financials
- Standard Procurement System (SPS) is fully integrated with Sigma for Financials and Procurement
- Financial statements available within 48 hours of period close

(ERP Newsletter Issue 1, 2004, P. 2)

4. SMART (Supply Maintenance Aviation Re-engineering Team)

First implemented in the fall of 2002 and Sponsored by NAVAIR/ NAVSEA, SMART is designed to replace legacy supply, maintenance and financial management systems with a modern, responsive, accurate and integrated system. (Issue 1, 2004, P. 4) This pilot has demonstrated improved capabilities in repair turn-around time, Inventory management, Data accuracy, and Financial recording and Reports development. Once again the Vendor for the core software was SAP. Specific accomplishments to date include:

- Integrated Supply, Maintenance, Financials in one software suite
- Wholesale and Retail supply in one database, enabling Multi-Echelon Sparing

- Hosting and desktop support within NMCI enclave
- NADEP scheduling, ATP and ICP Repair Planning / Funding Collaborative
- CFO Compliant Financials (FMB Blue Book satisfied)
- Ran first-ever Constrained Budget Plan in March 2003, which improved supply and maintenance decision-making based on constrained budgets
- Finite (exact date) delivery of spares and repair orders enables Availability-to-Promise delivery to customer
- Moving Average Cost of assets incorporated (vs. one price per item)
- FY 03 closeout accomplished within 33 hours

(ERP Newsletter Issue 1, 2004, P. 4)

C. NAVY ERP CONVERGENCE

In January 2003 the decision was made to realign the four pilot programs under one Program Management Office (PMO) and to "converge" the four projects into one Navy ERP Program. (Brief, 13 May 2004) This decision demonstrates the Navy's commitment to conform to a broader enterprise view and will required strong leadership and involvement from all stakeholders at all levels of the DON. In February 2004, five Process Councils were formed to direct the process changes required to standardize operations Navy-wide and enable the Navy to reap the most benefit from its ERP solution. The Navy will phase out funding in accordance with Table XX with 100% of the funding being allocated to the Converged ERP program by FY2009. They will converge the pilot programs into an integrated solution. From a civilian organizational perspective; the Navy went live with 4 divisions of the organization and will now merge the division solutions into one well planned program and risk minimizing approach.

TY $M	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Legacy ERP Systems								
SIGMA	64.2	37.8	34.3	32.3	10.3	0.0	0.0	0.0
NEMAIS	71.6	53.6	30.0	6.3	0.0	0.0	0.0	0.0
SMART	70.9	10.7	0.0	0.0	0.0	0.0	0.0	0.0
CABRILLO	7.5	6.4	6.4	6.4	1.6	0.0	0.0	0.0
Subtotal	**214.2**	**108.5**	**70.7**	**45.0**	**11.9**	**0.0**	**0.0**	**0.0**
Converged ERP								
Development	43.5	66.1	76.2	44.4	0.6	0.0	0.0	0.0
Deployment	15.4	2.8	42.1	38.5	74.9	56.7	72.7	48.8
Sustainment	0.0	0.0	6.8	26.1	61.7	76.7	85.4	85.2
Total Converged ERP	**58.9**	**68.9**	**125.0**	**109.0**	**137.2**	**133.4**	**158.1**	**134.0**
Total ERP Program	**265.5**	**182.0**	**198.3**	**156.6**	**148.0**	**133.4**	**158.1**	**134.0**

Figure 11 Legacy/Convergence Transition Funding Plan (From: Stone, 2004, P. 11)

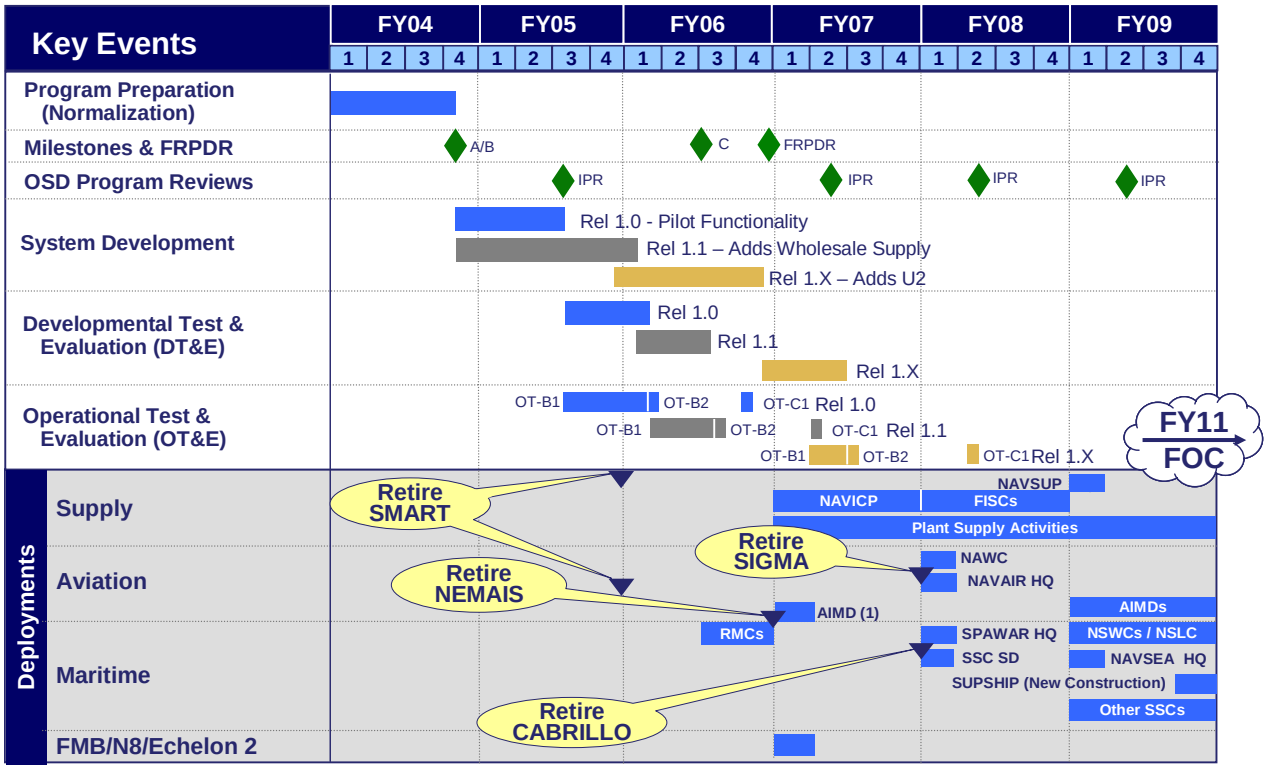


Figure 12 Legacy/Convergence Transition Timeline (From: Stone, 2004, P. 6)

VIII. CONCLUSION

The OPNAV NAPPI process improvement case study is a good example of how process reengineering has been effectively orchestrated within the DoN. Likewise, while not highlighted, the four ERP pilot programs each could have served as strong examples of successful change. Information Technology played a major role in the four programs, but little in the NAPPI program. IT should have been an enabler in the NAPPI program but it was not stressed. This led to large numbers of man hours lost each month to generate the monthly inputs required. Commands fell into the trap of producing the data, rather than analyzing the data. CNAP's Comptroller recognizes their analysts are spending too much time obtaining and maintaining data and not enough time analyzing it. This observance and an understanding of the Comptroller's strategic objective helps formulate my recommendations.

A. CNAP COMPTROLLER STRATEGIC OBJECTIVES

On several walls in the CNAP comptroller department their strategic objectives are prominently displayed. These objectives are:

1. Manage force financial resources in the most efficient manner possible to ensure that maximum force operational readiness is achieved.
2. Ensure a coordinated staff effort towards management of resources.
3. Improve and quantify management to OFC-50 funds to attain a realistic budget structure.
4. Identify force long range and intermediate requirements and factors, and integrate into departmental planning operations.
5. Upgrade/strengthen force financial management through consolidation directives, detailing procedures and providing functional guidance.
6. Enhance quantitative guidelines to measure the efficiency of resource utilization.
7. Maintain a viable "in house" training program.

(From Photo on CNAP Comptroller Office, 2004)

B. ERP AS AN ALTERNATIVE SOLUTION AT CNAP

The CNAP Comptroller Department is as effective as anyone could expect given the constrained and dynamic budget environment within which they operate. After gaining an understanding of the FHP/FO funding process and completing the preliminary on-site investigation, the following observations were noted:

- Current business practices and processes could be improved upon.
- Comptroller is minimally meeting their Strategic objectives
- There is no documented, trainable, repeatable Budget management As-Is process in place

As discussed earlier, ERP software attempts to integrate all departments and functions across a business onto a single computer system that can serve each department's (or command's) particular need. For an enterprise view to be adopted successfully at the CNAP level the scope of the enterprise would have to be defined to encompass Commander Naval Forces Pacific (CINCPAC) and CNAP's tenant commands (Echelon 2 thru 4) as stakeholders in the reengineering process.

C. POTENTIAL BENEFITS OF ERP FOR CNAP

When managing a 3.8 billion dollar budget and 3 colors of money (Air, Ship, and Combat /Support Operations) the benefits of an ERP system are undeniable. This would have a tremendous Return on Investment (ROI). The expected benefits for CNAP are:

- Common processes and business rules as well as a single set of data across the Enterprise
- Elimination of redundant processes across accounts
- Eliminate Over-Obligations and obtain zero error rate in obligation of funds
- Quarterly Reconciliation time reductions by orders of magnitude.
- Validate compliance with the Chief Financial Officer's (CFO) Act
- Financial statements and FY closeout available within 48 hours of period close
- Reduce civilian end strength. Far fewer personnel would be required for accounting, auditing, and budget analysis.
- Reduced contractor costs in the long term by eliminating legacy systems.
- Improved real-time information to more effectively allocate scarce dollars
- Provides employees near real-time access to their human resources information such as career development and training

Each and every one of the listed potential ERP pilot benefits to CNAP is being realized in the targeted areas of the four Pilot ERP programs by all the stakeholders (SPAWAR, NAVSEA/CFFC, NAVAIR, and NAVSUP). With the deployment of the Global Template Version 1 (the first Navy convergence product) the original stakeholders and many more will share in the combined benefits of the pilots.

D. RECOMMENDATIONS

Comptroller Department is a prime candidate for process re-engineering. The Comptroller Department strongly desires to be more effective and efficient and they recognize the benefits of an enterprise wide solution. This project report can serve as a template for further study. The desired end state is to provide the CNAP Comptroller Department with a roadmap and a template to successful management of their assets (personnel), resources (information technology, unit knowledge), in order to better meet their seven strategic objectives. The following course of action is recommended:

1. Conduct personal interviews to get a full understanding of how the department is aligned. Better organizational alignment will help ensure everyone's efforts are focused on work relevant to core strategic objectives of the department.
2. Develop a detailed process map that defines the optimal use of departmental resources. This will build upon the initial research conducted.
3. Define an agreed upon metric to track departmental effectiveness at meeting core strategic objectives of the department. (one example might be the obligation rate contained in the Fund Status Report).
4. Make recommendations regarding information technology's role in meeting the department's strategic objectives.

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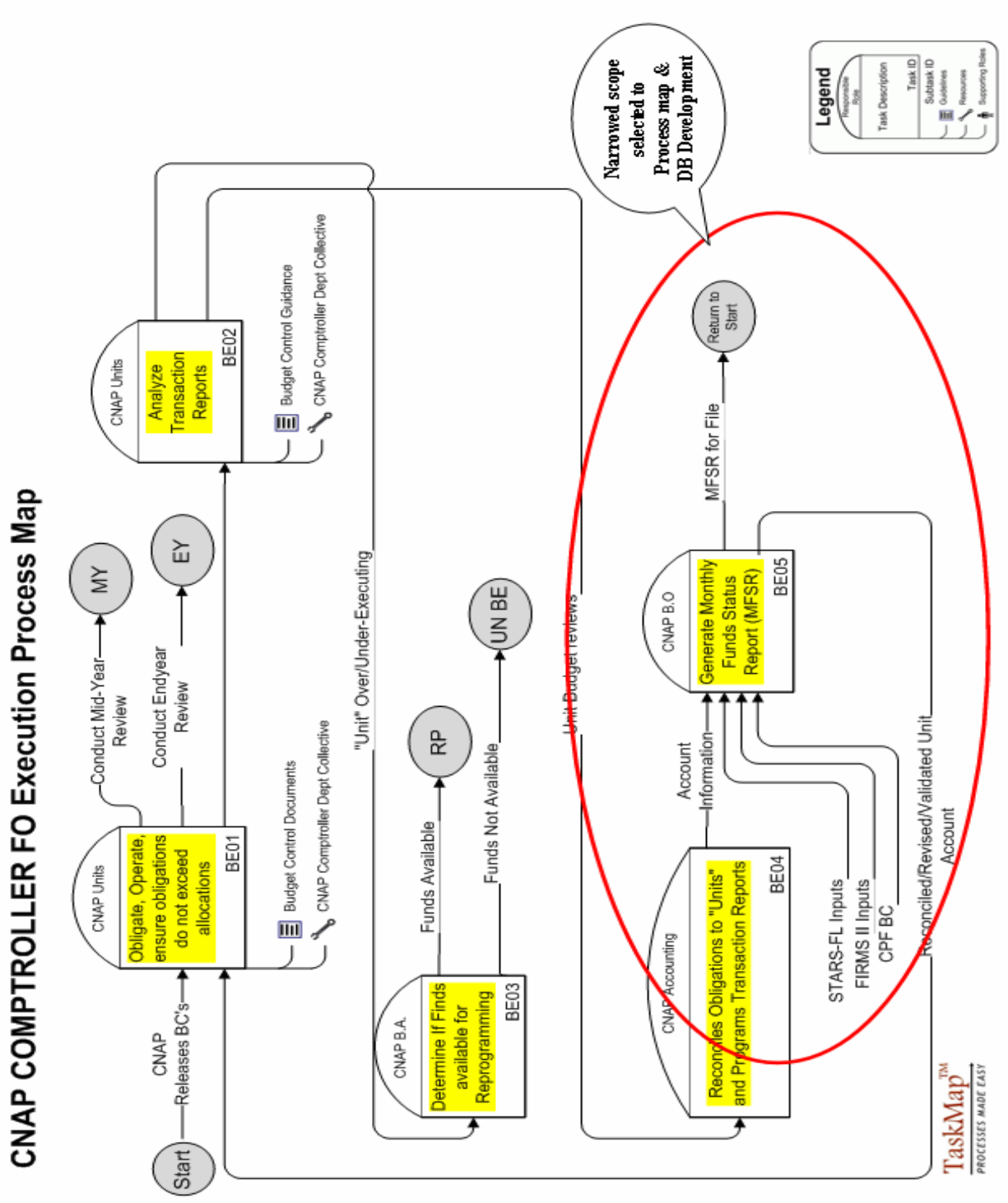
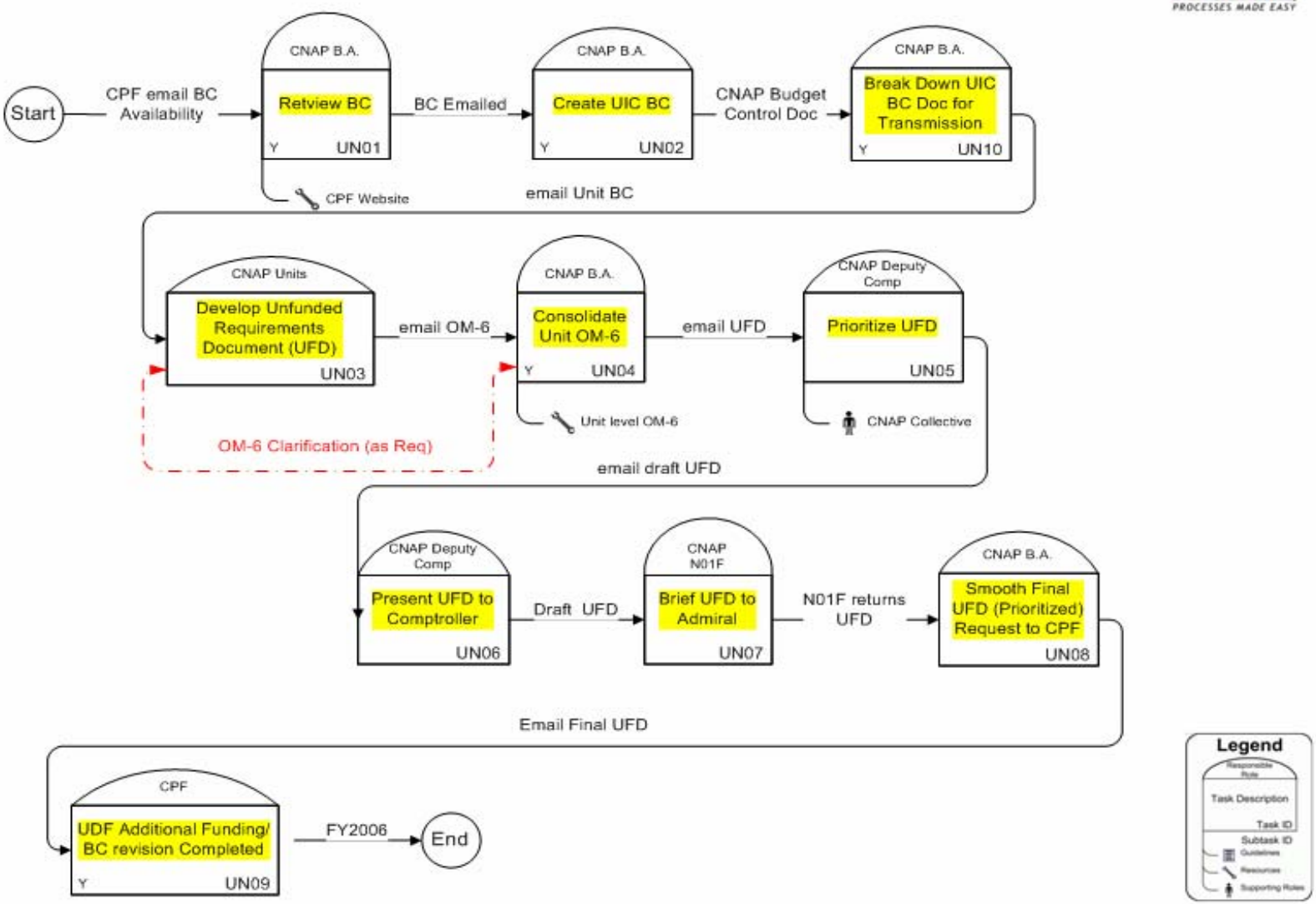
APPENDIX A. CNAP COMPTROLLER DEPARTMENT "AS-IS" PROCESS MAPS

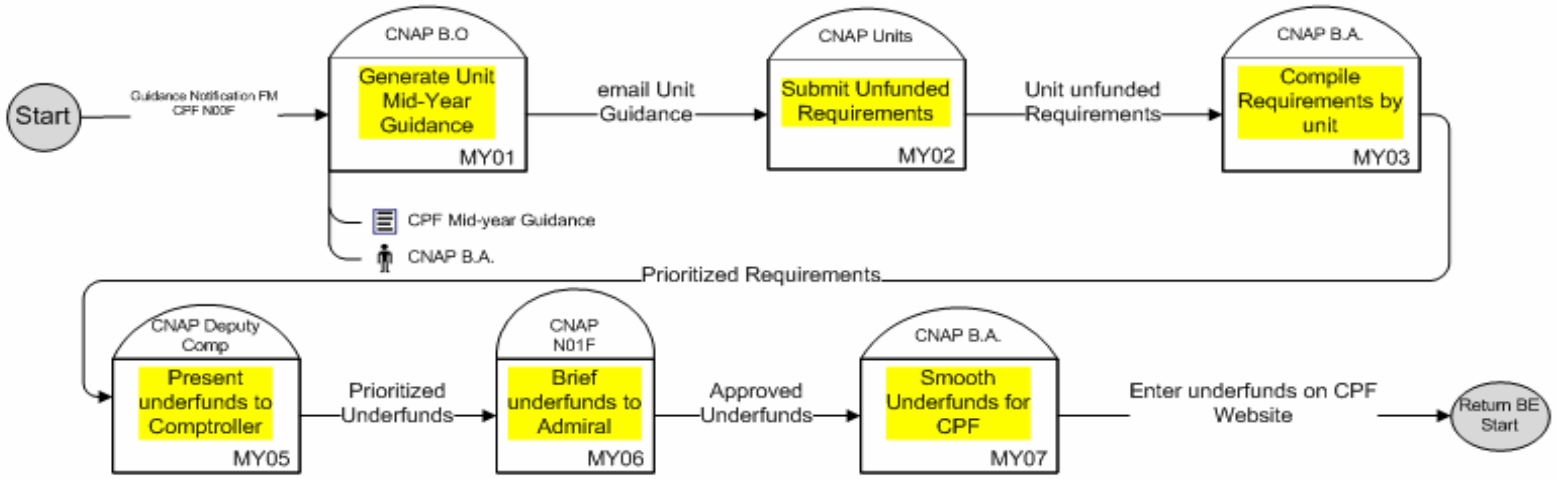


CNAP Comptroller FO Unfunded Budget Planning Process Map

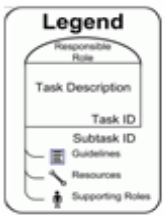
TaskMap™ PROCESSES MADE EASY



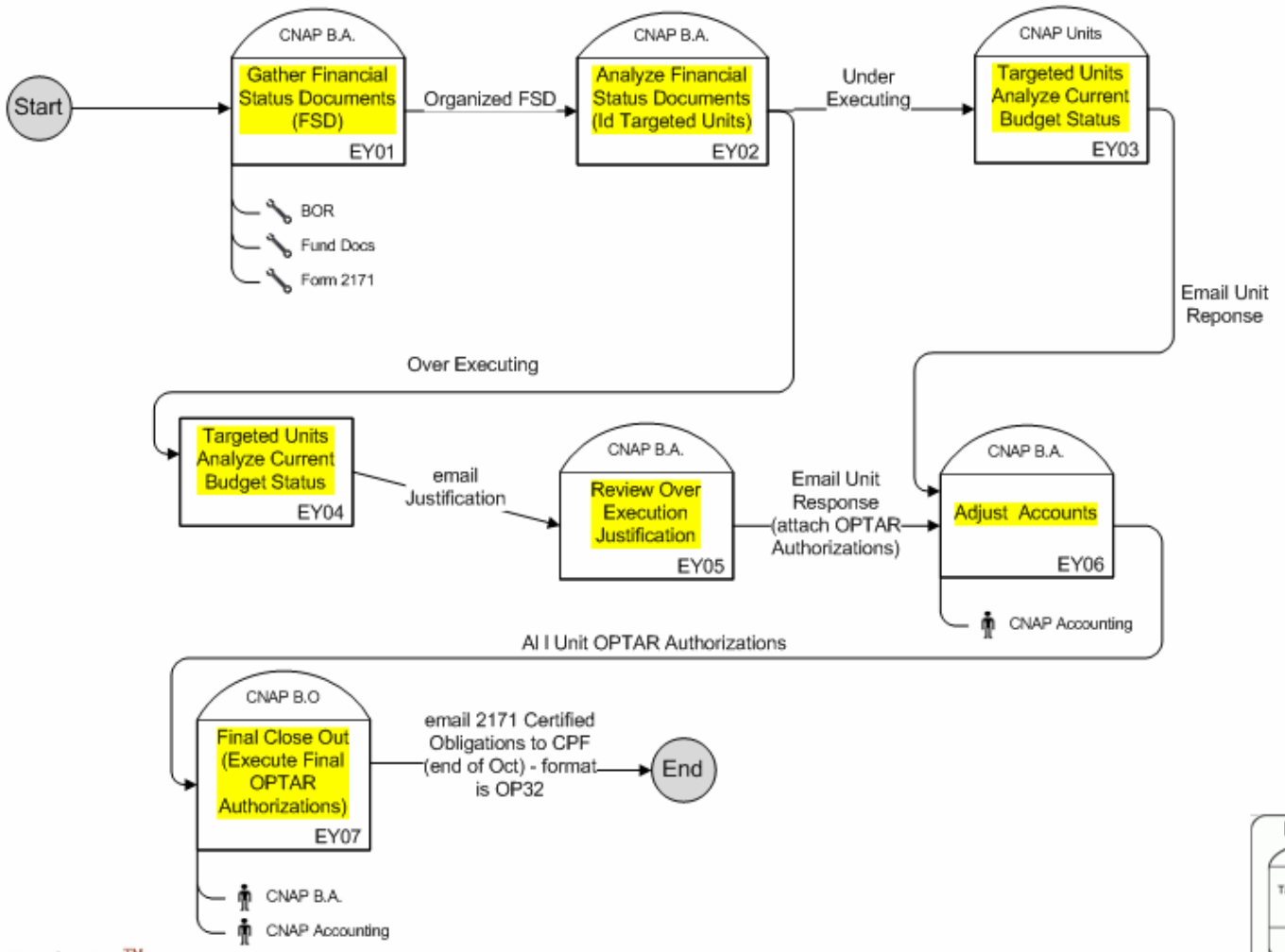
CNAP COMPTROLLER FO MidYear Review Process Map



TaskMap™
PROCESSES MADE EASY

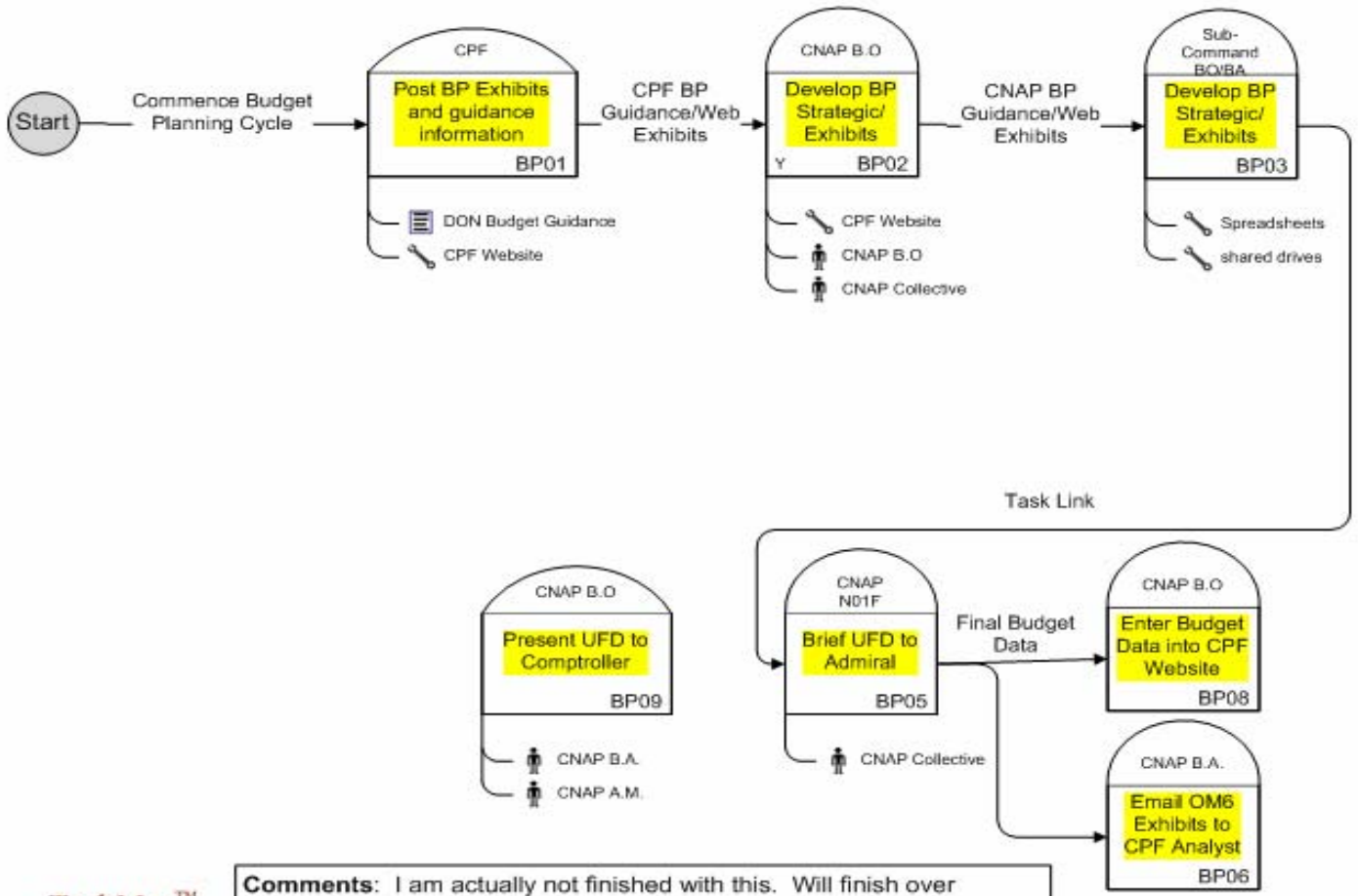


CNAP Comptroller FO End-Year Review Process Map



TaskMap™
PROCESSES MADE EASY

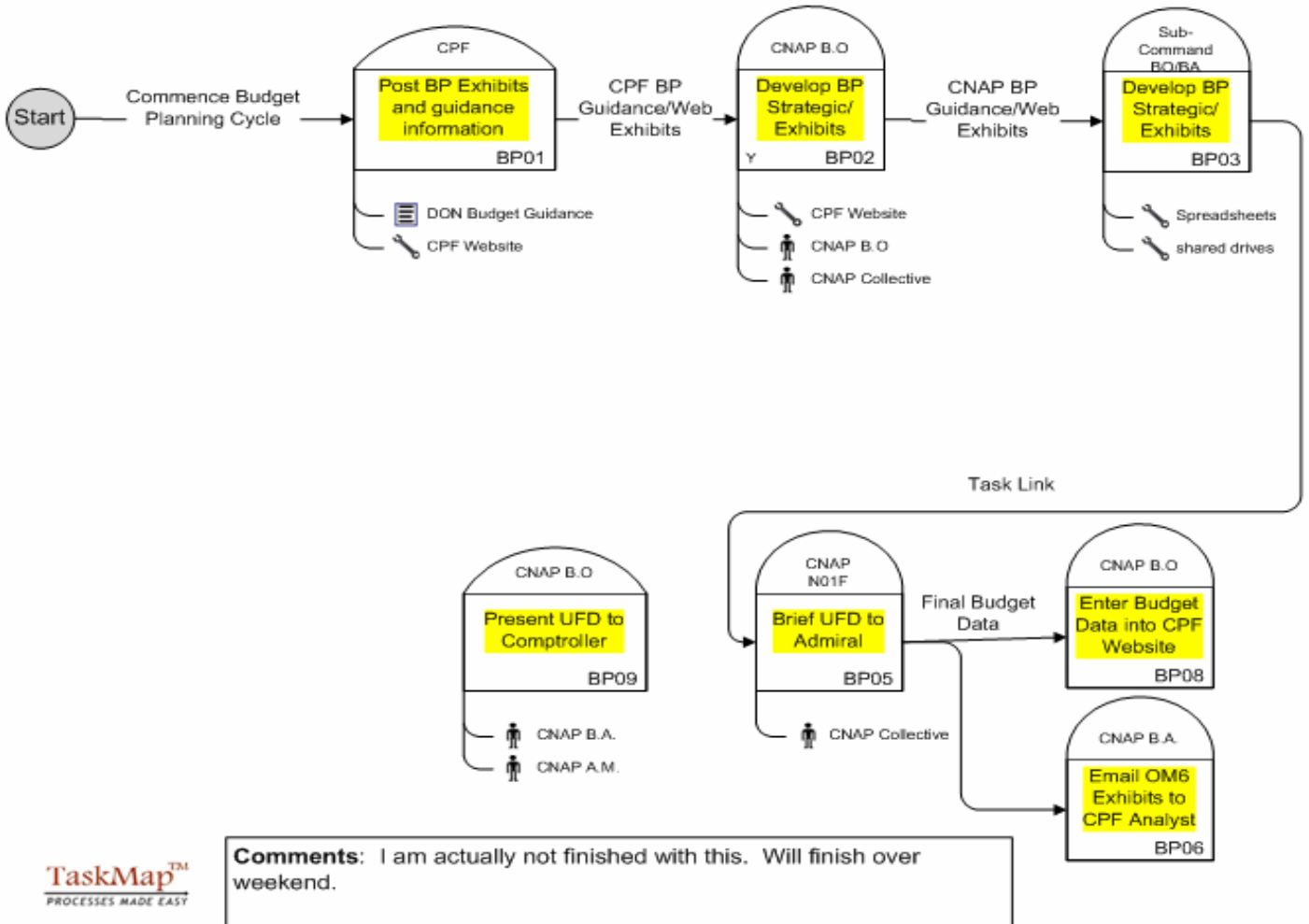
Budget Planning Process "As-Is"



TaskMap™ PROCESSES MADE EASY

Comments: I am actually not finished with this. Will finish over weekend.

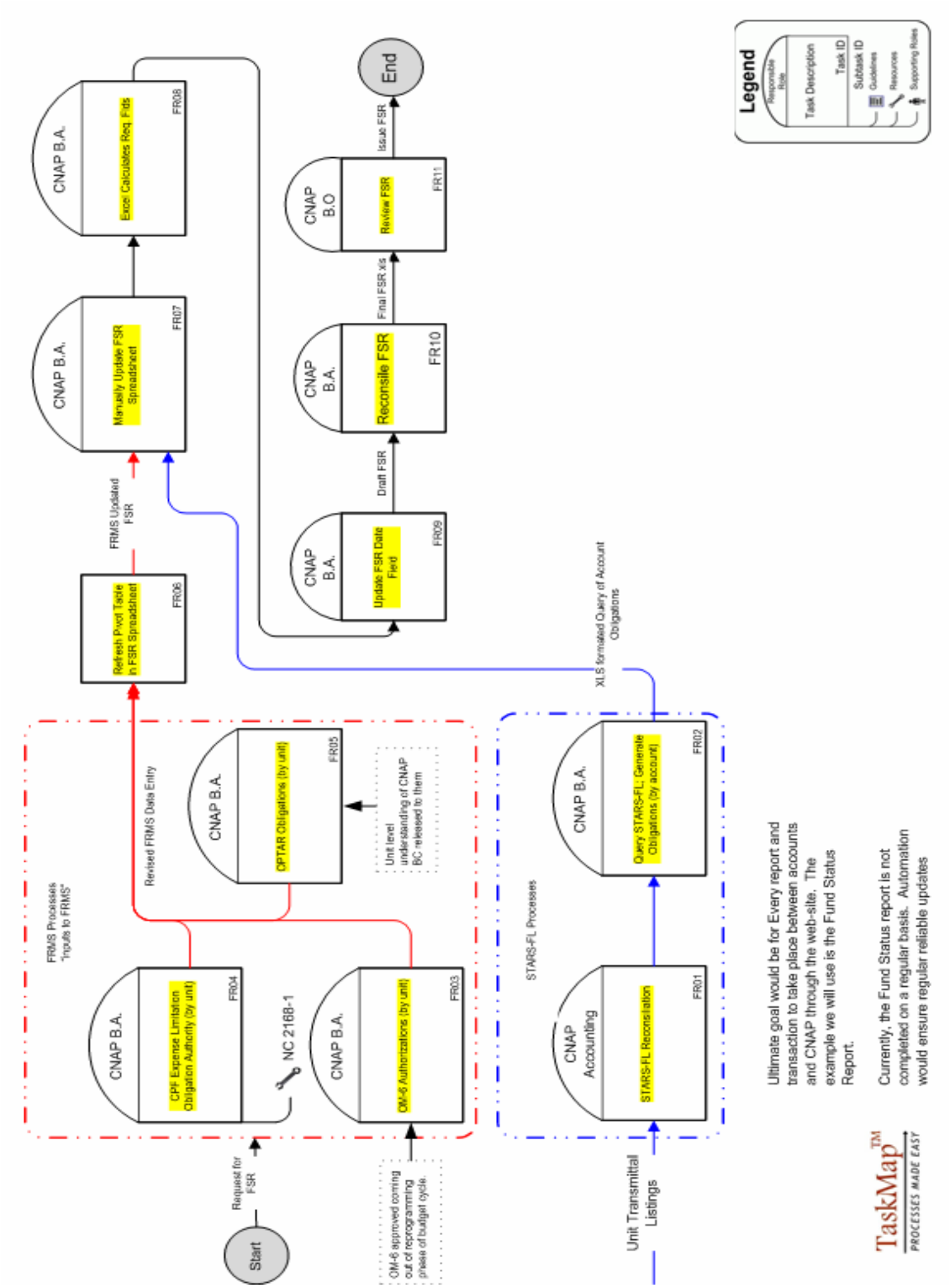
Budget Planning Process "As-Is"



TaskMap™ PROCESSES MADE EASY

Comments: I am actually not finished with this. Will finish over weekend.

APPENDIX B. CNAP COMPTROLLER DEPT. FUND STATUS REPORT (FSR) "AS-IS" PROCESS MAP



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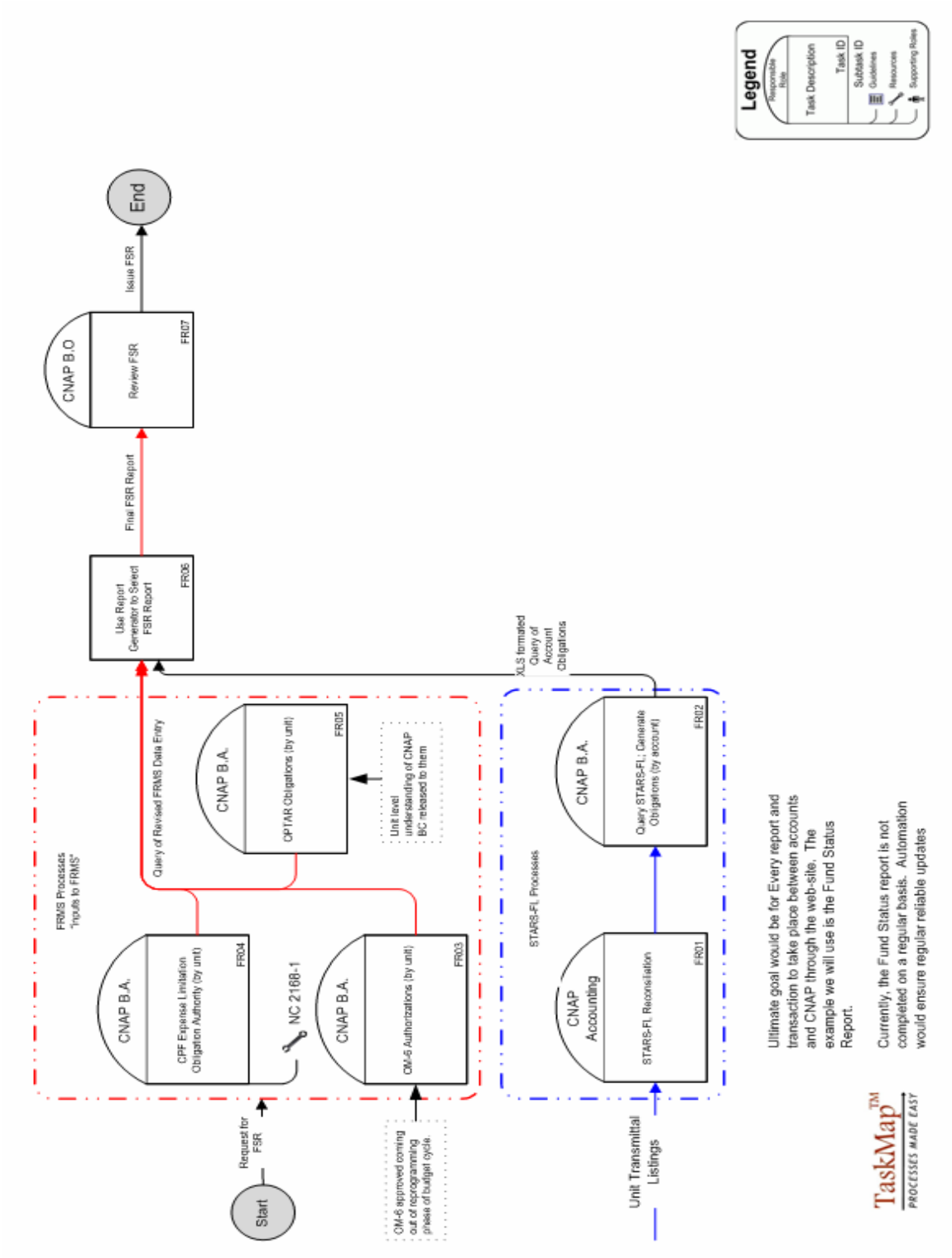
APPENDIX C. CNAP COMPTROLLER DEPT. FUND STATUS REPORT (FSR) "TO-BE" PROCESS MAP



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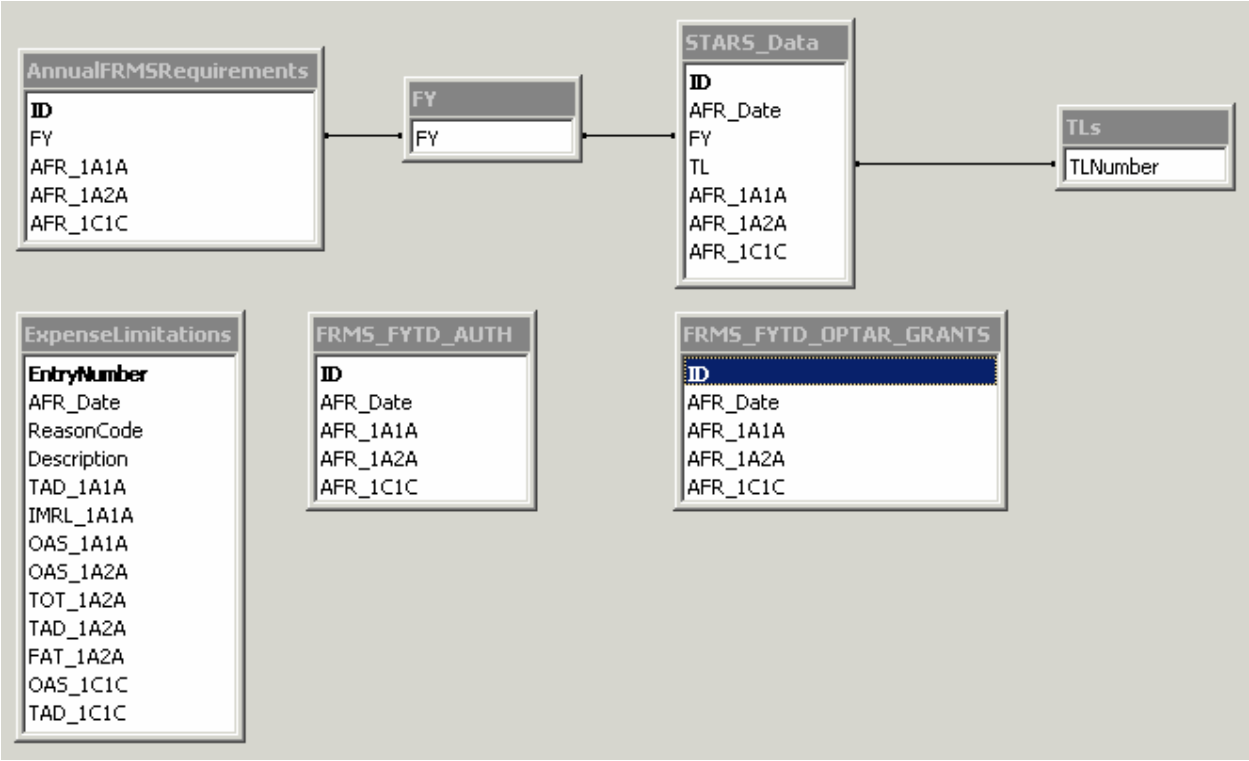
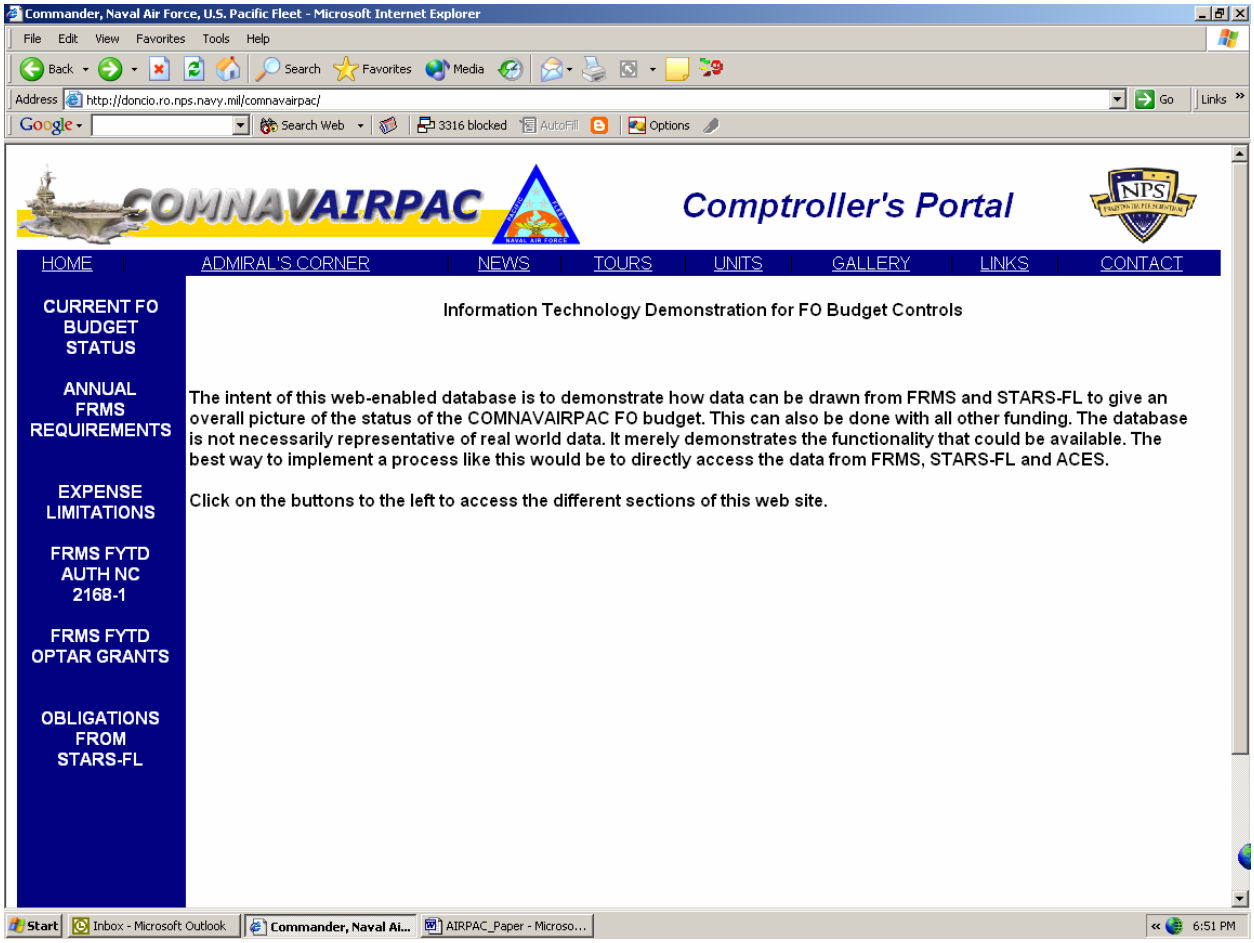
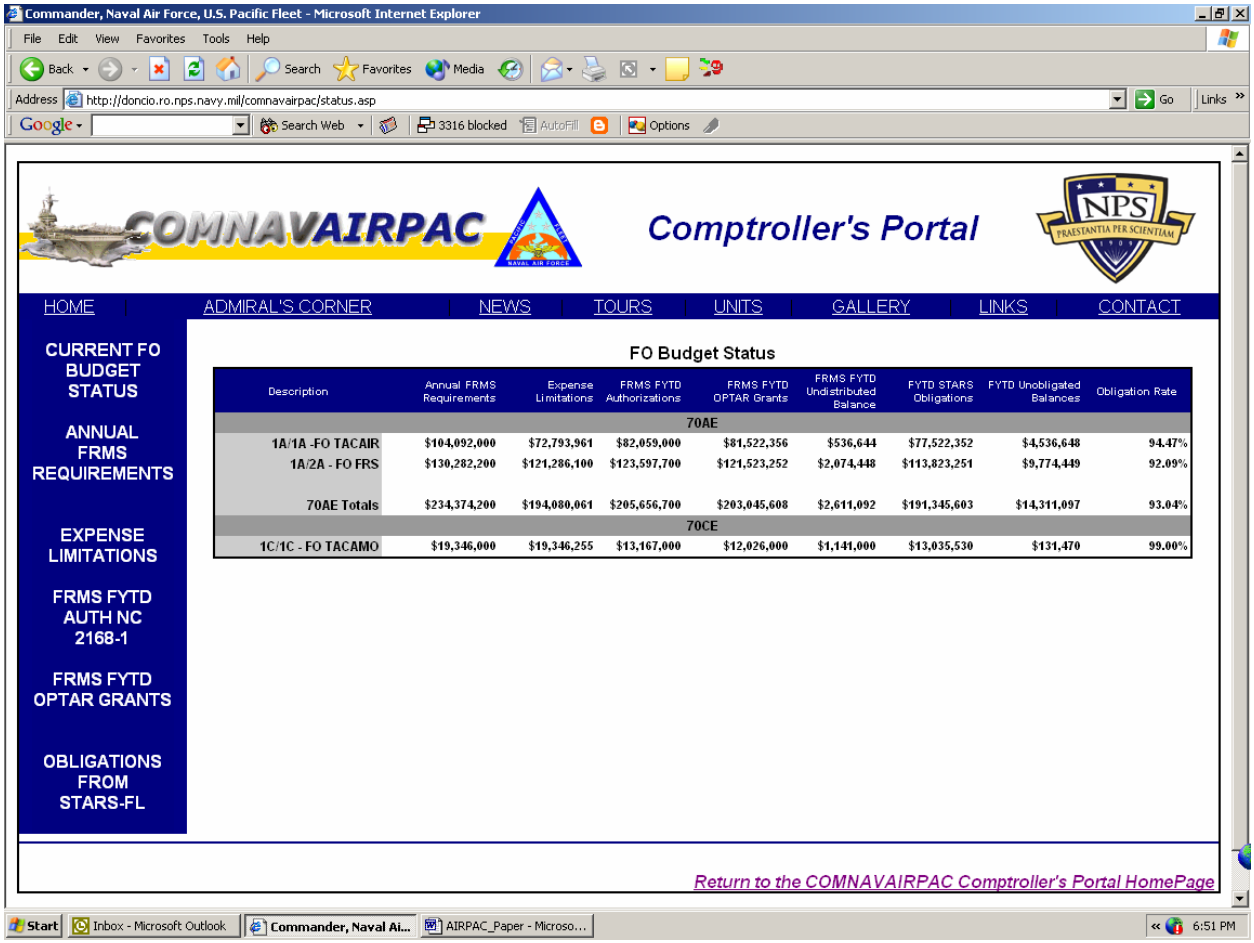
APPENDIX D. DATABASE PROTOTYPE IMAGE VIEWS

Database Schema

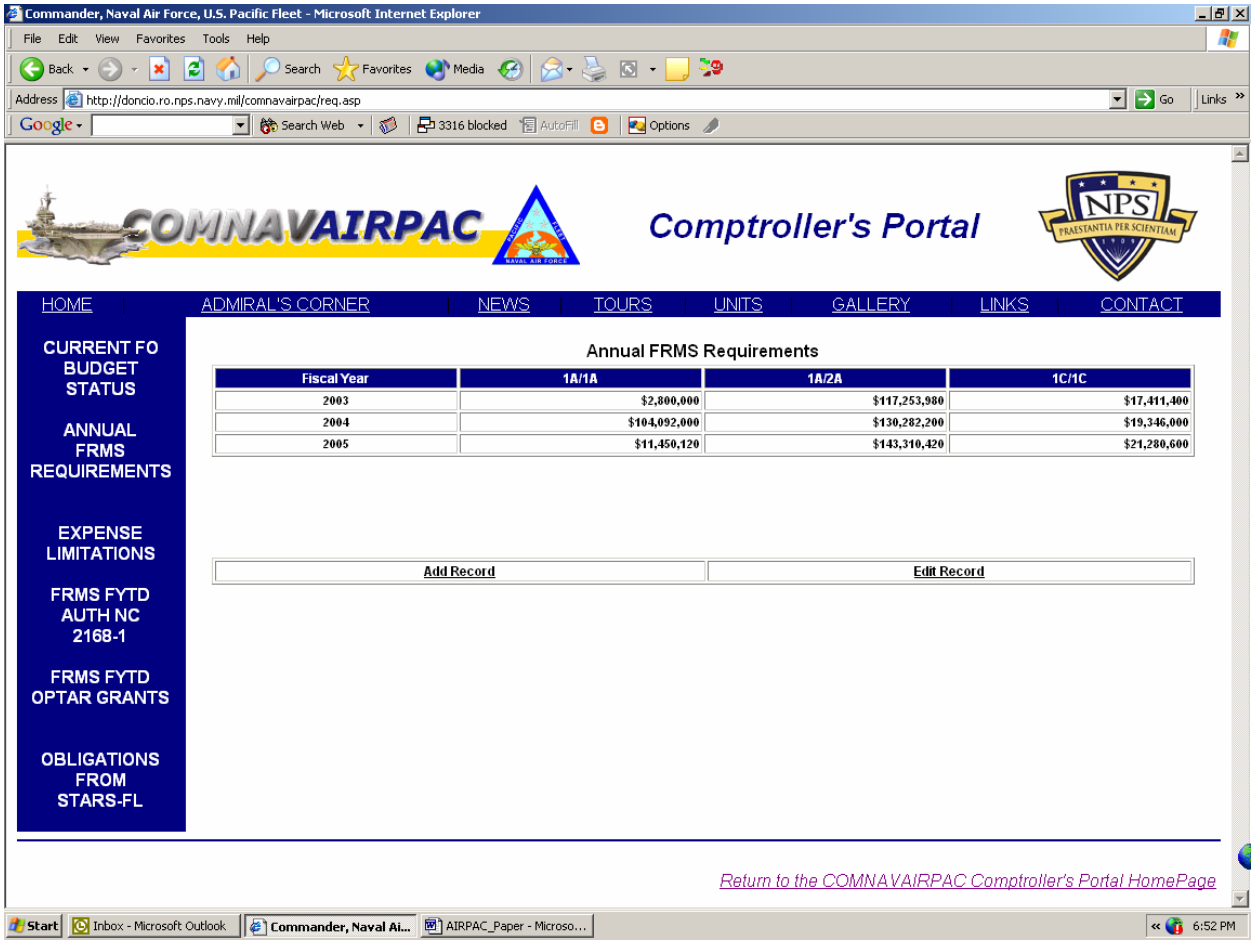




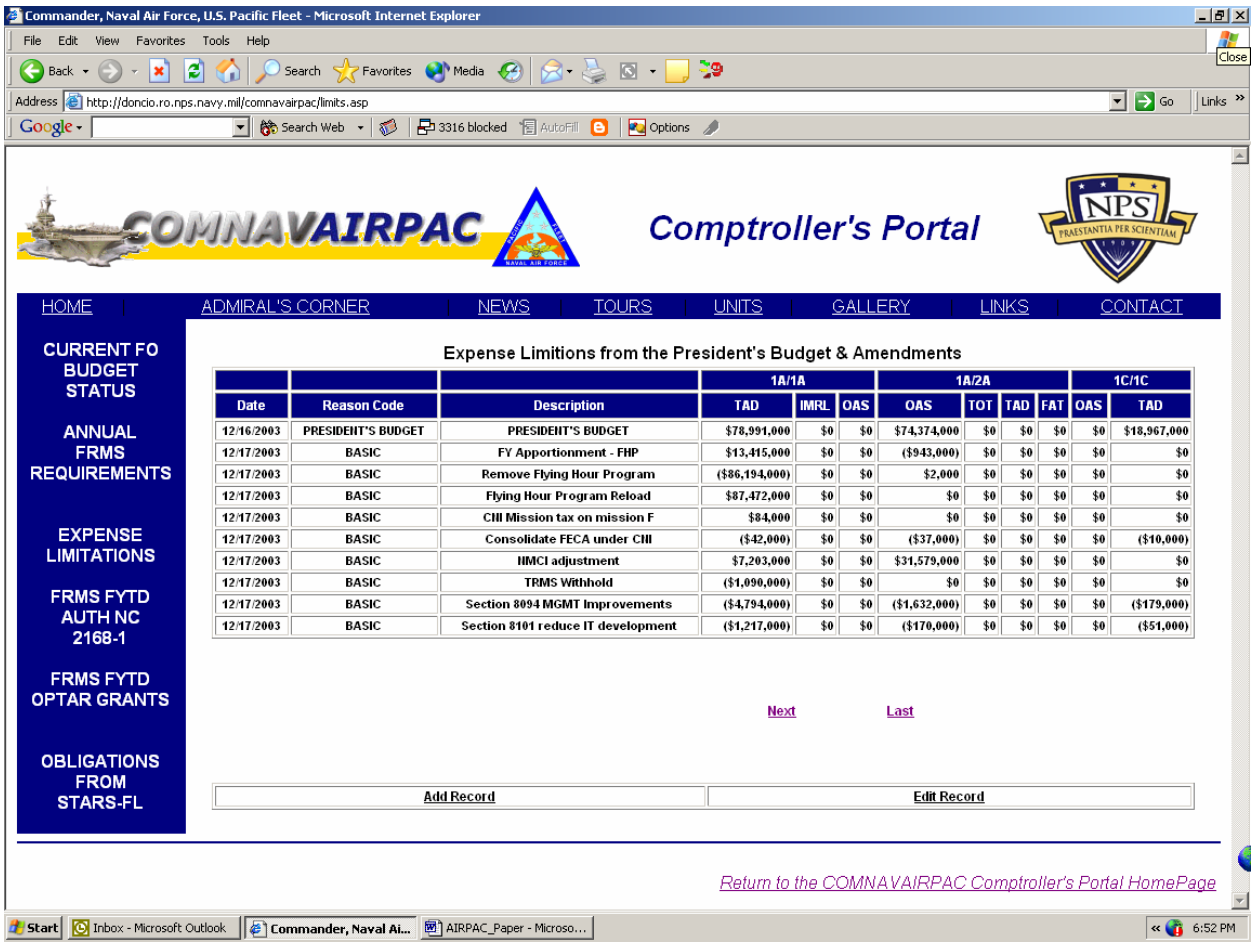
Portal Login Page



Current FO Budget Status Page

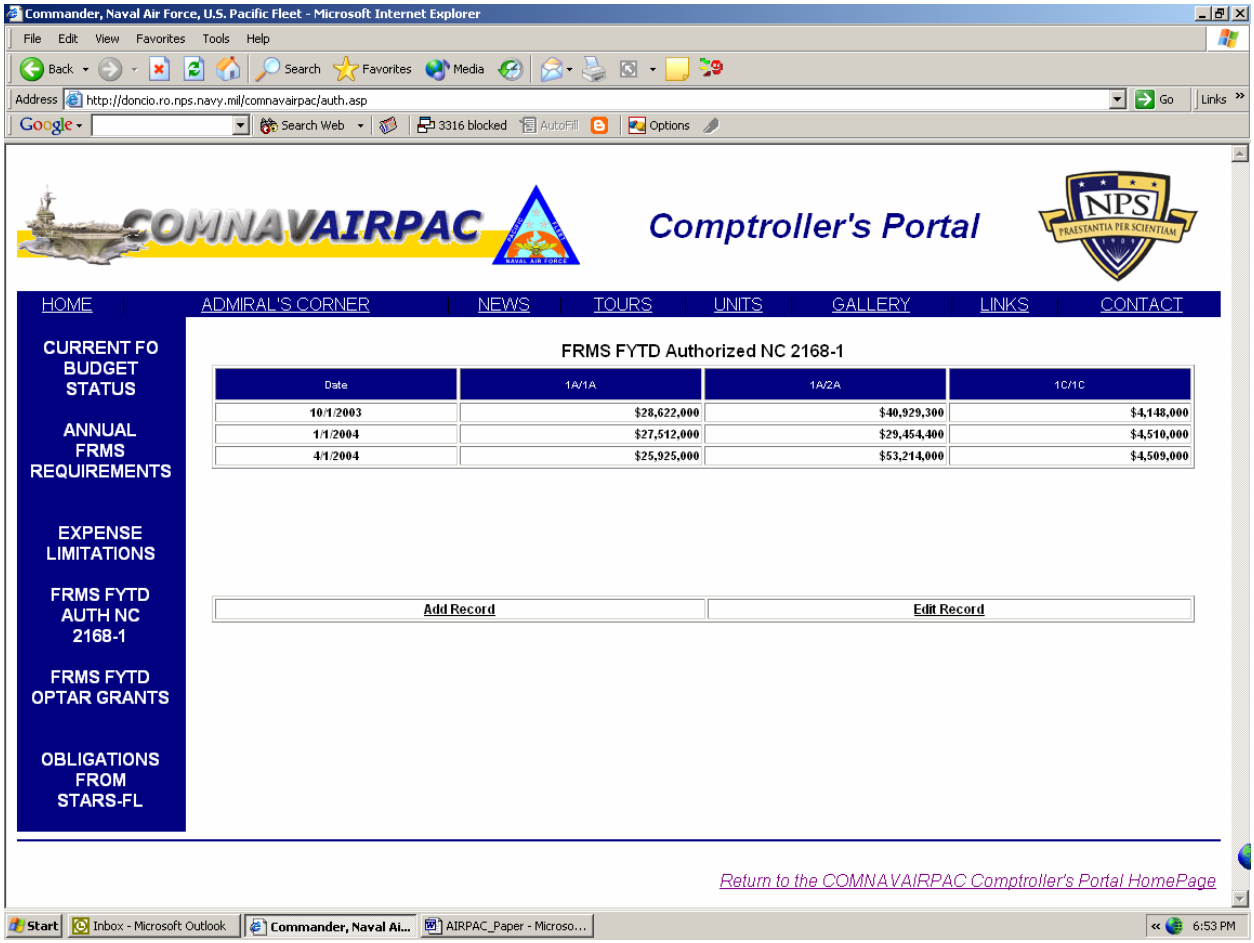


Annual FRMS Requirements Page

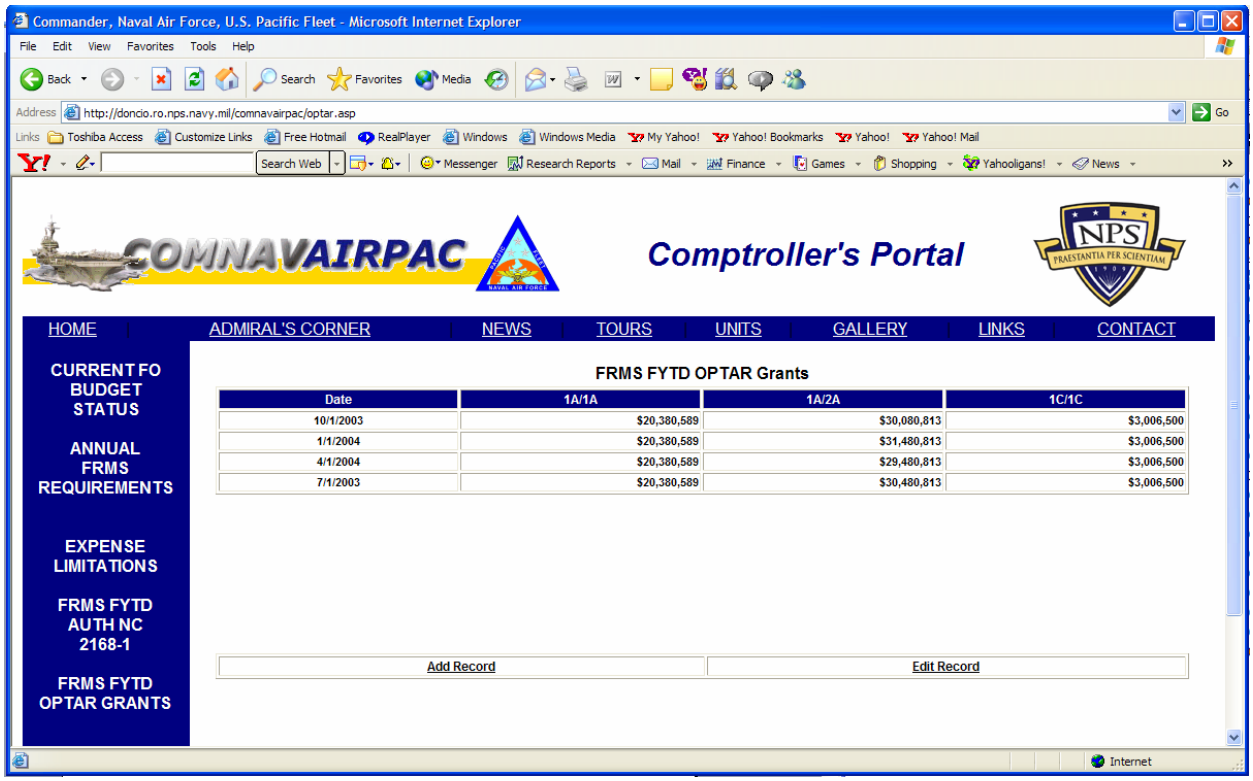


			1A/1A			1A/2A				1C/1C	
Date	Reason Code	Description	TAD	IMRL	OAS	OAS	TOT	TAD	FAT	OAS	TAD
12/16/2003	PRESIDENT'S BUDGET	PRESIDENT'S BUDGET	$78,991,000	$0	$0	$74,374,000	$0	$0	$0	$0	$18,967,000
12/17/2003	BASIC	FY Apportionment - FHP	$13,415,000	$0	$0	($943,000)	$0	$0	$0	$0	$0
12/17/2003	BASIC	Remove Flying Hour Program	($86,194,000)	$0	$0	$2,000	$0	$0	$0	$0	$0
12/17/2003	BASIC	Flying Hour Program Reload	$87,472,000	$0	$0	$0	$0	$0	$0	$0	$0
12/17/2003	BASIC	CIII Mission tax on mission F	$84,000	$0	$0	$0	$0	$0	$0	$0	$0
12/17/2003	BASIC	Consolidate FECA under CIII	($42,000)	$0	$0	($37,000)	$0	$0	$0	$0	($10,000)
12/17/2003	BASIC	NMCI adjustment	$7,203,000	$0	$0	$31,579,000	$0	$0	$0	$0	$0
12/17/2003	BASIC	TRMS Withhold	($1,090,000)	$0	$0	$0	$0	$0	$0	$0	$0
12/17/2003	BASIC	Section 8094 MGMT Improvements	($4,794,000)	$0	$0	($1,632,000)	$0	$0	$0	$0	($179,000)
12/17/2003	BASIC	Section 8101 reduce IT development	($1,217,000)	$0	$0	($170,000)	$0	$0	$0	$0	($51,000)

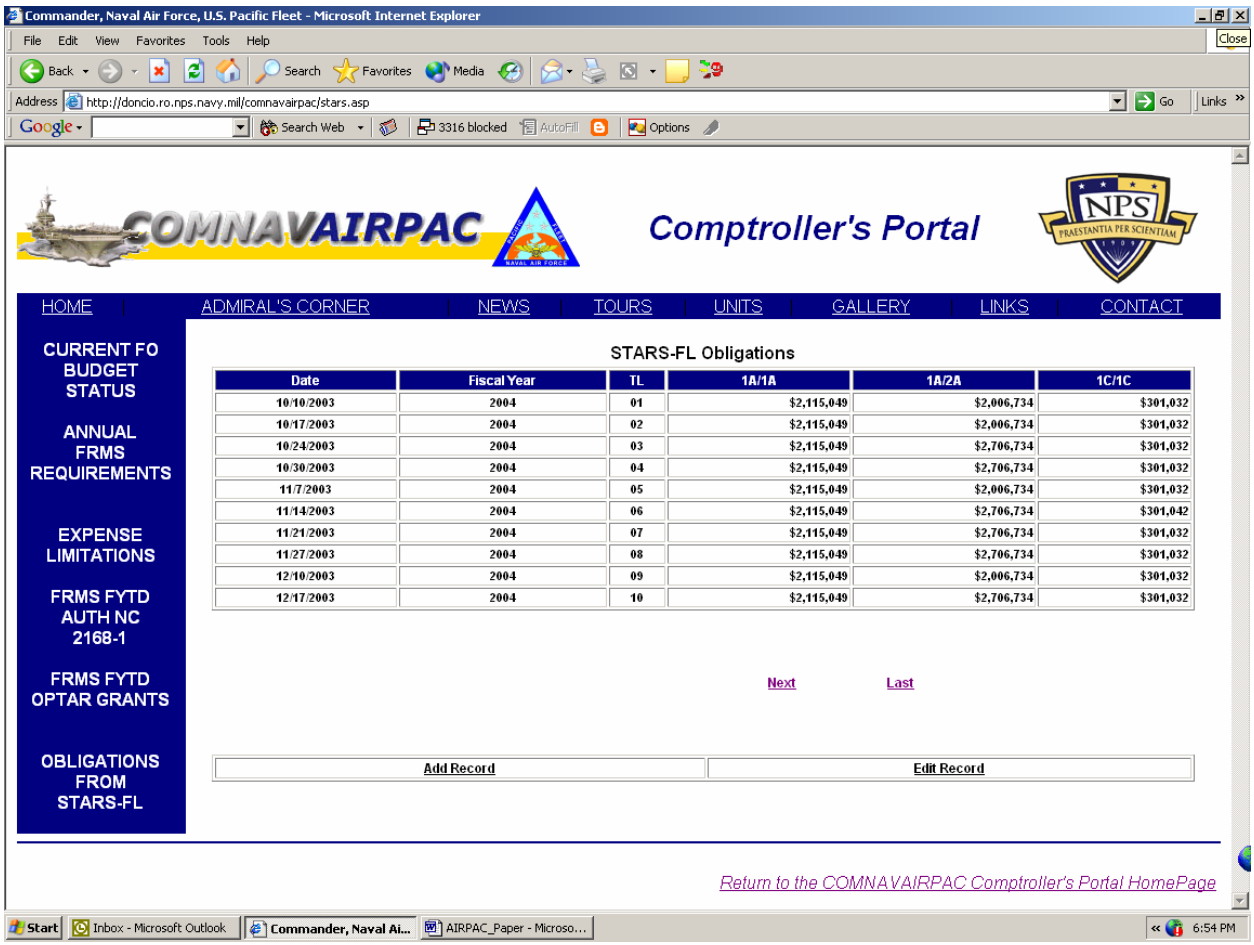
Expense Limitations Page



FMRS YTD Authorizations

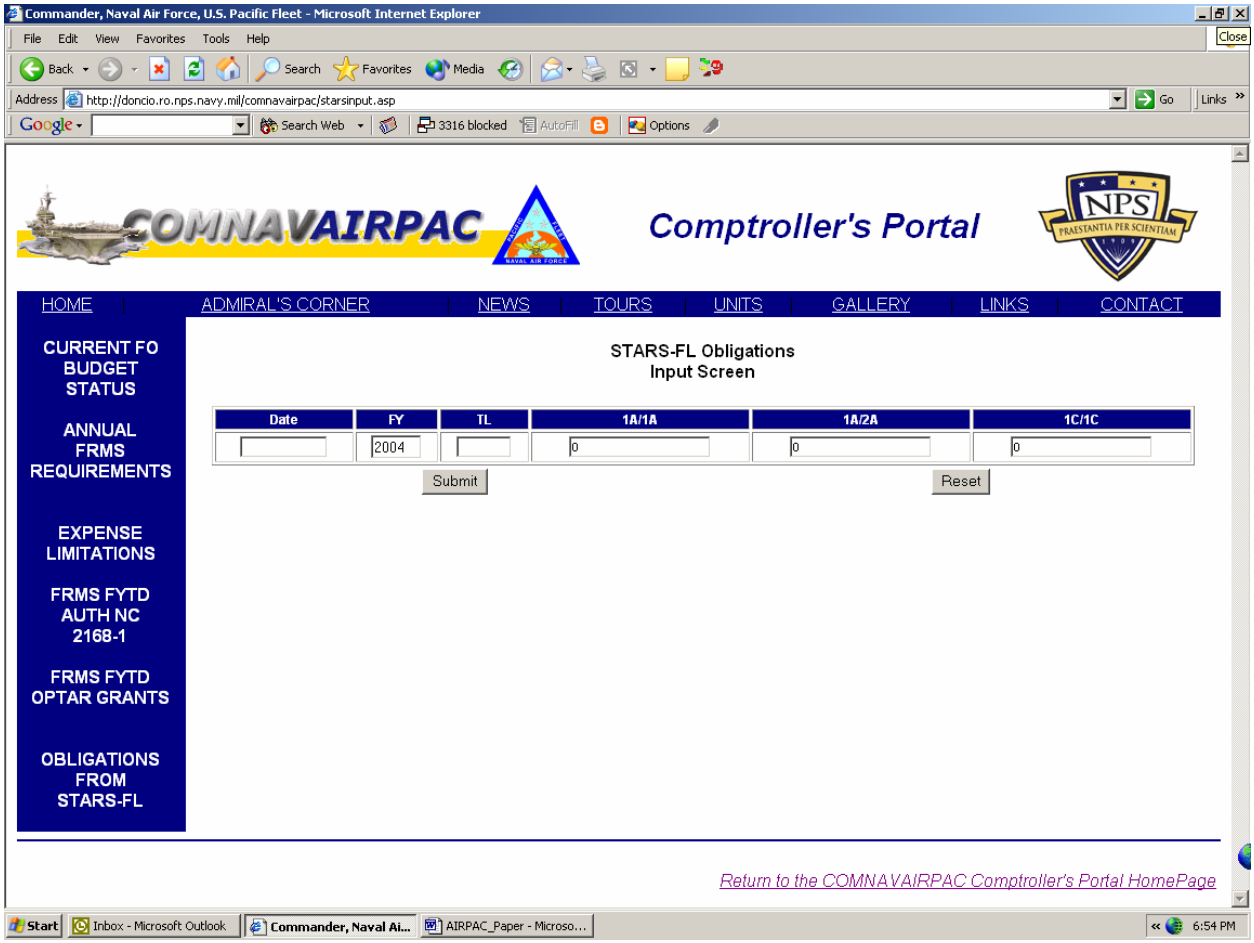


FRMS FYTD OPTAR Page



Date	Fiscal Year	TL	1A/1A	1A/2A	1C/1C
10/10/2003	2004	01	$2,115,049	$2,006,734	$301,032
10/17/2003	2004	02	$2,115,049	$2,006,734	$301,032
10/24/2003	2004	03	$2,115,049	$2,706,734	$301,032
10/30/2003	2004	04	$2,115,049	$2,706,734	$301,032
11/7/2003	2004	05	$2,115,049	$2,006,734	$301,032
11/14/2003	2004	06	$2,115,049	$2,706,734	$301,042
11/21/2003	2004	07	$2,115,049	$2,706,734	$301,032
11/27/2003	2004	08	$2,115,049	$2,706,734	$301,032
12/10/2003	2004	09	$2,115,049	$2,006,734	$301,032
12/17/2003	2004	10	$2,115,049	$2,706,734	$301,032

STARS-FL Obligations Main Page



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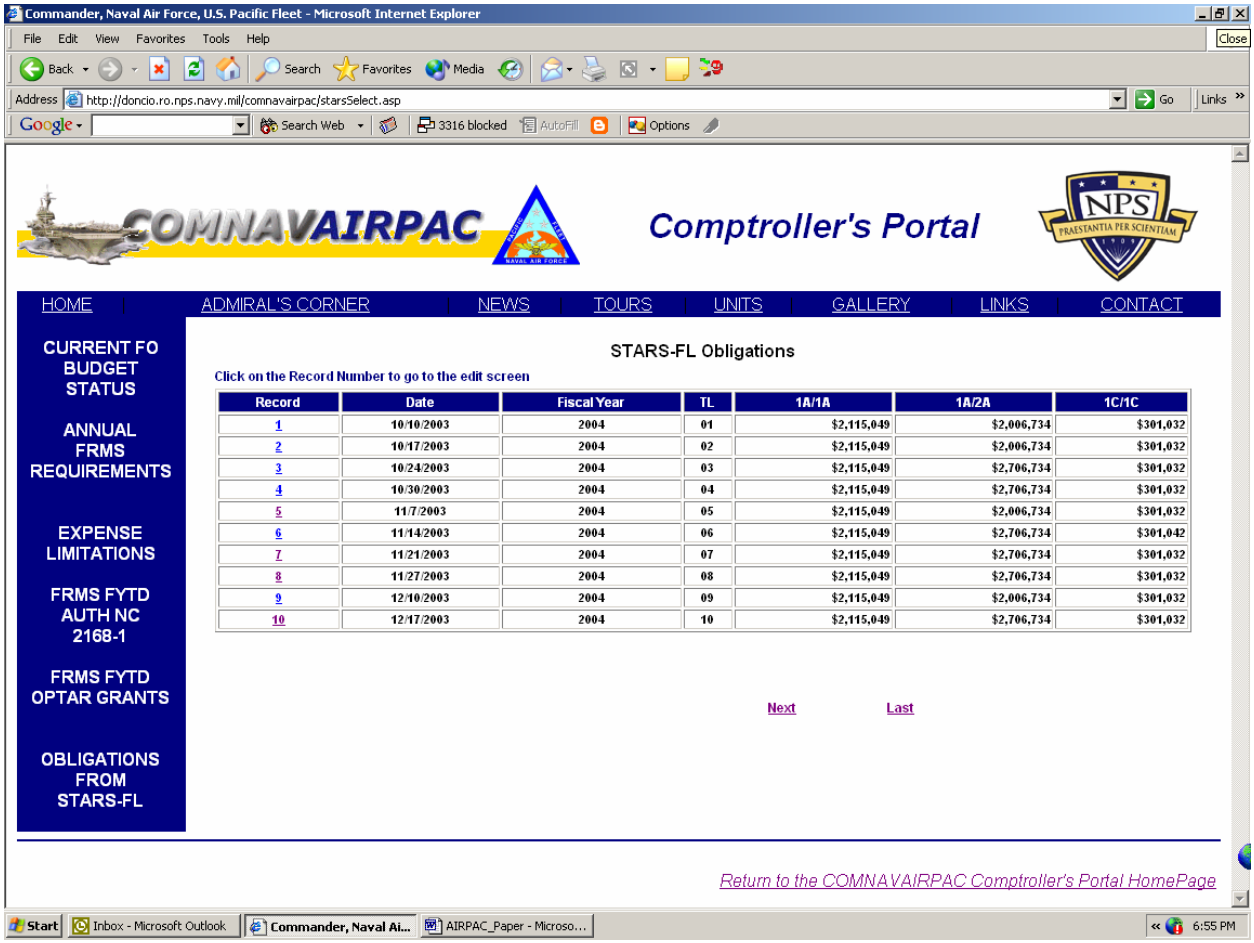
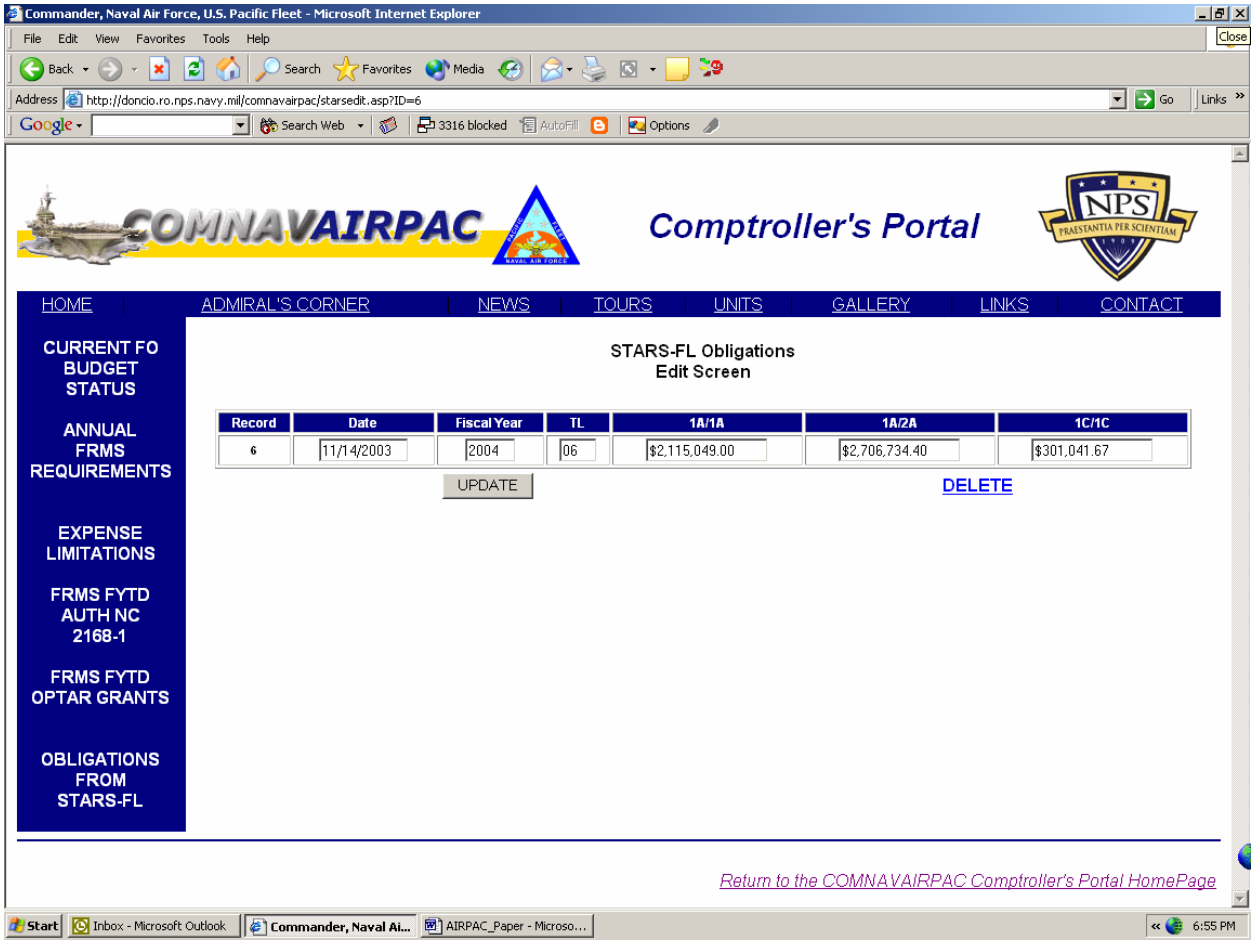


Record	Date	Fiscal Year	TL	1A/1A	1A/2A	1C/1C
1	10/10/2003	2004	01	$2,115,049	$2,006,734	$301,032
2	10/17/2003	2004	02	$2,115,049	$2,006,734	$301,032
3	10/24/2003	2004	03	$2,115,049	$2,706,734	$301,032
4	10/30/2003	2004	04	$2,115,049	$2,706,734	$301,032
5	11/7/2003	2004	05	$2,115,049	$2,006,734	$301,032
6	11/14/2003	2004	06	$2,115,049	$2,706,734	$301,042
7	11/21/2003	2004	07	$2,115,049	$2,706,734	$301,032
8	11/27/2003	2004	08	$2,115,049	$2,706,734	$301,032
9	12/10/2003	2004	09	$2,115,049	$2,006,734	$301,032
10	12/17/2003	2004	10	$2,115,049	$2,706,734	$301,032

STARS-FL Obligations Edit Page 1



STARS-FL Obligations Edit Page 2

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